

**SONY®**

PAL/CCIR

# **Display Products**

## **General Catalogue**

Issued February 2000

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Contents of this catalogue are valid as of February 2000.

# MONITOR

## BVM-D32E1WE/D32E1WA\* *BVM-D Series*



- 32-inch digital colour master monitor
- Modular design with optional separate control unit
- Flat surface, 16:9 aspect ratio HR Trinitron® CRT assures a high resolution of 1000 TV lines
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Beam landing correction
- Digital uniformity
- Digital convergence
- Built-in H/V delay, underscan, blue only, mono, tally functions
- Built-in test signal generator
- Component (YPbPr/GBR) input available as standard
- 4 slots available for optional input decoders
- Signals with the frequency range of 15.625 kHz to 45 kHz and DTV signals (See chart on p. 45-46) acceptable
- Aspect ratio 16:9 and 4:3 switchable
- 4:3 area marker
- Serial and parallel remote control capability
- Optional BKM-12Y Memory Card for storage and recall of primary set-up data
- Supported by Sony Interactive Status Reporting (ISR)

\* BVM-D32E1WA is an Australian version.

|                    |                                                                                                                   |
|--------------------|-------------------------------------------------------------------------------------------------------------------|
| Mass:              | Approx. 95 kg (209 lb)                                                                                            |
| Power consumption: | 170 W (with Option: 230 W max.)                                                                                   |
| Dimensions:        | 794 (W) x 556.5 (H) x 694 (D) mm<br>(31 <sup>3</sup> / <sub>8</sub> x 22 x 27 <sup>3</sup> / <sub>8</sub> inches) |

## BVM-D24E1WE/D24E1WA\* *BVM-D Series*



- 24-inch digital colour master monitor
- Modular design with optional separate control unit
- Flat surface, 16:9 aspect ratio HR Trinitron CRT assures a high resolution of 1000 TV lines
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Beam landing correction
- Digital uniformity
- Built-in H/V delay, underscan, blue only, mono, tally functions
- Built-in test signal generator
- Component (YPbPr/GBR) input available as standard
- 4 slots available for optional input decoders
- Signals with the frequency range of 15.625 kHz to 45 kHz and DTV signals (See chart on p. 45-46) acceptable
- Aspect ratio 16:9 and 4:3 switchable
- 4:3 area marker
- Serial and parallel remote control capability
- Optional BKM-12Y Memory Card for storage and recall of primary set-up data
- Supported by Sony Interactive Status Reporting (ISR)

\* BVM-D24E1WA is an Australian version.

---

|                    |                                                                                                                                                   |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Mass:              | Approx. 51 kg (112 lb 3 oz)                                                                                                                       |
| Power consumption: | 155 W (with Option: 205 W max.)                                                                                                                   |
| Dimensions:        | 565.5 (W) x 436.8 (H) x 587.3 (D) mm<br>(22 <sup>3</sup> / <sub>8</sub> x 17 <sup>1</sup> / <sub>4</sub> x 23 <sup>1</sup> / <sub>8</sub> inches) |

---

# BVM-D20F1E/D20F1A\* *BVM-D Series*



- 20-inch digital colour master monitor
- Modular design with optional separate control unit
- 4:3 aspect ratio HR Trinitron CRT assures a high resolution of 900/700 TV lines (4:3/16:9 modes)
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Built-in H/V delay, underscan, blue only, mono, tally functions
- Built-in test signal generator
- Component (YPbPr/GBR) input available as standard
- 4 slots available for optional input decoders
- Signals with the frequency range of 15.625 kHz to 45 kHz and DTV signals (See chart on p. 45-46) acceptable
- Aspect ratio 16:9 and 4:3 switchable
- 4:3 area marker
- Serial and parallel remote control capability
- Optional BKM-12Y Memory Card for storage and recall of primary set-up data
- Supported by Sony Interactive Status Reporting (ISR)

\* BVM-D20F1A is an Australian version.

---

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Mass:              | Approx. 38 kg (83 lb 10 oz)                                         |
| Power consumption: | 150 W (with Option: 210 W max.)                                     |
| Dimensions:        | 444 (W) x 414 (H) x 570 (D) mm<br>(17 1/2 x 16 3/8 x 22 1/2 inches) |

---

**BVM-D14H1E/D14H1A\*** *BVM-D Series*

- 14-inch digital colour picture monitor
- Modular design with optional separate control unit
- 4:3 aspect ratio HR Trinitron CRT assures a high resolution of 800/600 TV lines (4:3/16:9 modes)
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Built-in H/V delay, underscan, blue only, mono, 3 colour tally functions
- Component (YPbPr/GBR) input available as standard
- 3 slots available for optional input decoders
- Signals with the frequency range of 15.625 kHz to 45 kHz and DTV signals (See chart on p. 45-46) acceptable
- Aspect ratio 16:9 and 4:3 switchable
- 4:3 area marker
- Serial and parallel remote control capability
- Mountable into a 19-inch EIA standard rack with the optional BKM-31E14

\* BVM-D14H1A is an Australian version.

---

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Mass:              | Approx. 21 kg (46 lb 3 oz)                                          |
| Power consumption: | 100 W (with Option: 115 W max.)                                     |
| Dimensions:        | 346 (W) x 280 (H) x 519 (D) mm<br>(13 5/8 x 11 1/8 x 20 1/2 inches) |

---

# BVM-D14H5E/D14H5A\* *BVM-D Series*



- 14-inch digital colour picture monitor
- Stand alone design with integral control unit
- 4:3 aspect ratio HR Trinitron CRT assures a high resolution of 800/600 TV lines (4:3/16:9 modes)
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Built-in H/V delay, underscan, blue only, mono, 3 colour tally functions
- Component (YPbPr/GBR) input available as standard
- 3 slots available for optional input decoders
- Signals with the frequency range of 15.625 kHz to 45 kHz and DTV signals (See chart on p. 45-46) acceptable
- Aspect ratio 16:9 and 4:3 switchable
- 4:3 area marker
- Serial and parallel remote control capability
- Mountable into a 19-inch EIA standard rack with the optional BKM-30E14

\* BVM-D14H5A is an Australian version.

---

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Mass:              | Approx. 23 kg (50 lb 10 oz)                                     |
| Power consumption: | 100 W (with Option: 115 W max.)                                 |
| Dimensions:        | 482 (W) x 280 (H) x 562 (D) mm<br>(19 x 11 1/8 x 22 1/4 inches) |

---

**BVM-D9H1E/D9H1A\****BVM-D Series*

- 9-inch digital colour picture monitor
- Modular design with optional separate control unit
- 4:3 aspect ratio HR Trinitron CRT assures a high resolution of 450/340 TV lines (4:3/16:9 modes)
- Auto set-up for chroma, phase and white balance
- Stable colour temperature reproduction due to beam current feedback
- Built-in H/V delay, underscan, blue only, mono, 3 colour tally functions
- Component (YPbPr/GBR) input available as standard
- 3 slots available for optional input decoders
- Signals with the frequency range of 15.625 kHz to 45 kHz and DTV signals (See chart on p. 45-46) acceptable
- Aspect ratio 16:9 and 4:3 switchable
- 4:3 area marker
- Serial and parallel remote control capability
- Mountable into a 19-inch EIA standard rack with the optional MB-520
- 3 alternative power sources available: supplied AC power adaptor, external DC 12 V and optional BP-L60A/L90A

\* BVM-D9H1A is an Australian version.

---

|                    |                                                                                                                                                                                                   |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mass:              | Approx. 8.1 kg (17 lb 13 oz), 8.9 kg (19 lb 9 oz)* <sup>1</sup>                                                                                                                                   |
| Power consumption: | 60 W (with Option: 85 W max.)                                                                                                                                                                     |
| Dimensions:        | 217 (W) x 174 (H) x 364.5 (438)* <sup>2</sup> (D) mm<br>(8 <sup>5</sup> / <sub>8</sub> x 6 <sup>7</sup> / <sub>8</sub> x 14 <sup>3</sup> / <sub>8</sub> (17 <sup>1</sup> / <sub>4</sub> ) inches) |

\*<sup>1</sup> Mass with AC adaptor

\*<sup>2</sup> Maximum depth with AC adaptor

---

# BVM-D9H5E/D9H5A\*

*BVM-D Series*



- 9-inch digital colour monitor for field use
- Stand alone design with integral control unit and simple stand
- 4:3 aspect ratio HR Trinitron CRT assures a high resolution of 450/340 TV lines (4:3/16:9 modes)
- Auto set-up for chroma, phase and white balance
- Stable colour temperature reproduction due to beam current feedback
- Built-in H/V delay, underscan, blue only, mono, 3 colour tally functions
- Component (YPbPr/GBR) input available as standard
- 3 slots available for optional input decoders
- Signals with the frequency range of 15.625 kHz to 45 kHz and DTV signals (See chart on p. 45-46) acceptable
- Aspect ratio 16:9 and 4:3 switchable
- 4:3 area marker
- Serial and parallel remote control capability
- Mountable into a 19-inch EIA standard rack with the optional MB-520
- Audio capability and built-in speaker
- 3 alternative power sources available: supplied AC power adaptor, external DC 12 V and optional BP-L60A/L90A

\* BVM-D9H5A is an Australian version.

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|                    |                                                                                              |
|--------------------|----------------------------------------------------------------------------------------------|
| Mass:              | Approx. 9.3 kg (20 lb 7 oz), 10.1 kg (22 lb 4 oz)* <sup>1</sup>                              |
| Power consumption: | 60 W (with Option: 85 W max.)                                                                |
| Dimensions:        | 217 (W) x 218 (H) x 379.5 (453)* <sup>2</sup> (D) mm<br>(8 5/8 x 8 5/8 x 15 (17 7/8) inches) |

\*<sup>1</sup> Mass with AC adaptor

\*<sup>2</sup> Maximum depth with AC adaptor

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**BVM-20E1E\****BVM Series*

- Super High Precision 20-inch colour video monitor
- Modular design with optional separate control unit
- HR Trinitron displays resolution of over 1000 TV lines
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Component (Y, R-Y, B-Y)/RGB input available as standard
- 4 slots available for optional input decoders
- Number of inputs expandable with optional input expansion boards:
  - 24 composite inputs or
  - 12 SDI or
  - 9 component or
  - 8 Y/C inputs
 (Types and numbers of inputs depend on option boards used)
- Aspect ratio 4:3 and 16:9 switchable, optional 16:9 bezel available
- Serial and parallel remote control capability
- Memory card BKM-12Y option for easy and consistent set-up of monitors
- Supported by Sony Interactive Status Reporting (ISR)

\* BVM-20E1E/A is an Australian version.

---

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Mass:              | 37 kg (81 lb 9 oz)                                                  |
| Power consumption: | 200 W (max.)                                                        |
| Dimensions:        | 444 (W) x 414 (H) x 570 (D) mm<br>(17 1/2 x 16 3/8 x 22 1/2 inches) |

---

## BVM-20F1E\*

*BVM Series*



- High Precision 20-inch colour video monitor
- Modular design with optional separate control unit
- HR Trinitron displays resolution of over 900 TV lines
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Component (Y, R-Y, B-Y)/RGB input available as standard
- 4 slots available for optional input decoders
- Number of inputs expandable with optional input expansion boards:
  - 24 composite inputs or
  - 12 SDI or
  - 9 component or
  - 8 Y/C inputs(Types and numbers of inputs depend on option boards used)
- Aspect ratio 4:3 and 16:9 switchable, optional 16:9 bezel available
- Serial and parallel remote control capability
- Memory card BKM-12Y option for easy and consistent set-up of monitors
- Supported by Sony Interactive Status Reporting (ISR)

\* BVM-20F1E/A is an Australian version.

---

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Mass:              | 37 kg (81 lb 9 oz)                                                  |
| Power consumption: | 200 W (max.)                                                        |
| Dimensions:        | 444 (W) x 414 (H) x 570 (D) mm<br>(17 1/2 x 16 3/8 x 22 1/2 inches) |

---

**BVM-20G1E/20G1A\****BVM Series*

- Precision 20-inch colour video monitor
- Modular design with optional separate control unit
- HR Trinitron displays resolution of over 800 TV lines
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Component (Y, R-Y, B-Y)/RGB input available as standard
- 1 slot available for optional input decoders
- Number of inputs expandable with optional input expansion boards:
  - 6 composite inputs or
  - 3 SDI or
  - 3 component or
  - 2 Y/C inputs
- (Types and numbers of inputs depend on option boards used)
- Aspect ratio 4:3 and 16:9 switchable, optional 16:9 bezel available
- Serial and parallel remote control capability
- Memory card BKM-12Y option for easy and consistent set-up of monitors
- Supported by Sony Interactive Status Reporting (ISR)

\* BVM-20G1A is an Australian version.

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|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Mass:              | 37 kg (81 lb 9 oz)                                                  |
| Power consumption: | 125 W (with Option: 140 W max.)                                     |
| Dimensions:        | 444 (W) x 414 (H) x 570 (D) mm<br>(17 1/2 x 16 3/8 x 22 1/2 inches) |

---

## BVM-14E1E\*

*BVM Series*



- Super High Precision 14-inch colour video monitor
  - Modular design with optional separate control unit
  - HR Trinitron displays resolution of over 900 TV lines
  - EBU phosphors ensure consistent colour reproduction
  - Auto set-up for chroma, phase and white balance
  - Precise colour temperature adjustment with a colour analyser
  - Stable colour temperature reproduction due to beam current feedback
  - Component (Y, R-Y, B-Y)/RGB input available as standard
  - 2 slots available for optional input decoders
  - Number of inputs expandable with optional input expansion boards:
    - 12 composite inputs or
    - 6 SDI or
    - 5 component or
    - 4 Y/C inputs
- (Types and numbers of inputs depend on option boards used)
- Aspect ratio 4:3 and 16:9 switchable, optional 16:9 bezel available
  - Serial and parallel remote control capability
  - Memory card BKM-12Y option for easy and consistent set-up of monitors
  - Supported by Sony Interactive Status Reporting (ISR)

\* BVM-14E1E/A is an Australian version.

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|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Mass:              | 23 kg (51 lb)                                                       |
| Power consumption: | 145 W (max.)                                                        |
| Dimensions:        | 346 (W) x 280 (H) x 530 (D) mm<br>(13 5/8 x 11 1/8 x 20 7/8 inches) |

---

**BVM-14E5E\****BVM Series*

- Super High Precision 14-inch colour video monitor
- Stand alone design with integral control unit
- HR Trinitron display resolution of over 900 TV lines
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Component (Y, R-Y, B-Y)/RGB input available as standard
- 4 slots available for optional input decoders
- Number of inputs expandable with optional input expansion boards:
  - 24 composite inputs or
  - 12 SDI or
  - 9 component or
  - 8 Y/C inputs
- (Types and numbers of inputs depend on option boards used)
- Aspect ratio 4:3 and 16:9 switchable, optional 16:9 bezel available
- Serial and parallel remote control capability
- Memory card BKM-12Y option for easy and consistent set-up of monitors
- Supported by Sony Interactive Status Reporting (ISR)

\* BVM-14E5E/A is an Australian version.

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|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Mass:              | 26 kg (57 lb)                                                   |
| Power consumption: | 175 W (max.)                                                    |
| Dimensions:        | 482 (W) x 280 (H) x 530 (D) mm<br>(19 x 11 1/8 x 20 7/8 inches) |

---

## BVM-14F1E\*

*BVM Series*



- High Precision 14-inch colour video monitor
  - Modular design with optional separate control unit
  - HR Trinitron displays resolution of over 800 TV lines
  - EBU phosphors ensure consistent colour reproduction
  - Auto set-up for chroma, phase and white balance
  - Precise colour temperature adjustment with a colour analyser
  - Stable colour temperature reproduction due to beam current feedback
  - Component (Y, R-Y, B-Y)/RGB input available as standard
  - 2 slots available for optional input decoders
  - Number of inputs expandable with optional input expansion boards:
    - 12 composite inputs or
    - 6 SDI or
    - 5 component or
    - 4 Y/C inputs
- (Types and numbers of inputs depend on option boards used)
- Aspect ratio 4:3 and 16:9 switchable, optional 16:9 bezel available
  - Serial and parallel remote control capability
  - Memory card BKM-12Y option for easy and consistent set-up of monitors
  - Supported by Sony Interactive Status Reporting (ISR)

\* BVM-14F1E/A is an Australian version.

---

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Mass:              | 23 kg (51 lb)                                                       |
| Power consumption: | 145 W (max.)                                                        |
| Dimensions:        | 346 (W) x 280 (H) x 530 (D) mm<br>(13 5/8 x 11 1/8 x 20 7/8 inches) |

---

**BVM-14F5E\****BVM Series*

- High Precision 14-inch colour video monitor
- Stand alone design with integral control unit
- HR Trinitron displays resolution of over 800 TV lines
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Component (Y, R-Y, B-Y)/RGB input available as standard
- 4 slots available for optional input decoders
- Number of inputs expandable with optional input expansion boards:
  - 24 composite inputs or
  - 12 SDI or
  - 9 component or
  - 8 Y/C inputs
- (Types and numbers of inputs depend on option boards used)
- Aspect ratio 4:3 and 16:9 switchable, optional 16:9 bezel available
- Serial and parallel remote control capability
- Memory card BKM-12Y option for easy and consistent set-up of monitors
- Supported by Sony Interactive Status Reporting (ISR)

\* BVM-14F5E/A is an Australian version.

---

|                    |                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------|
| Mass:              | 26 kg (57 lb)                                                                                                   |
| Power consumption: | 175 W (max.)                                                                                                    |
| Dimensions:        | 482 (W) x 280 (H) x 530 (D) mm<br>(19 x 11 <sup>1</sup> / <sub>8</sub> x 20 <sup>7</sup> / <sub>8</sub> inches) |

---

## BVM-14G1E/14G1A\*

*BVM Series*



- Precision 14-inch colour video monitor
  - Modular configuration with optional separate control unit
  - HR Trinitron displays resolution of over 800 TV lines
  - EBU phosphors ensure consistent colour reproduction
  - Auto set-up for chroma, phase and white balance
  - Precise colour temperature adjustment with a colour analyser
  - Stable colour temperature reproduction due to beam current feedback
  - Component (Y, R-Y, B-Y)/RGB input available as standard
  - 1 slot available for optional input decoders
  - Number of inputs expandable with optional input expansion boards:
    - 6 composite inputs or
    - 3 SDI or
    - 3 component or
    - 2 Y/C inputs
- (Types and numbers of inputs depend on option boards used)
- Aspect ratio 4:3 and 16:9 switchable, optional 16:9 bezel available
  - Serial and parallel remote control capability
  - Memory card BKM-12Y option for easy and consistent set-up of monitors
  - Supported by Sony Interactive Status Reporting (ISR)

\* BVM-14G1A is an Australian version.

---

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Mass:              | 22 kg (48 lb 8 oz)                                                  |
| Power consumption: | 105 W (with Option: 120 W max.)                                     |
| Dimensions:        | 346 (W) x 280 (H) x 530 (D) mm<br>(13 5/8 x 11 1/8 x 20 7/8 inches) |

---

**BVM-14G5E/14G5A\****BVM Series*

- Precision 14-inch colour video monitor
- Stand alone design with integral control unit
- HR Trinitron displays resolution of over 800 TV lines
- EBU phosphors ensure consistent colour reproduction
- Auto set-up for chroma, phase and white balance
- Precise colour temperature adjustment with a colour analyser
- Stable colour temperature reproduction due to beam current feedback
- Component (Y, R-Y, B-Y)/RGB input available as standard
- 1 slot available for optional input decoders
- Number of inputs expandable with optional input expansion boards:
  - 6 composite inputs or
  - 3 SDI or
  - 3 component or
  - 2 Y/C inputs
- (Types and numbers of inputs depend on option boards used)
- Aspect ratio 4:3 and 16:9 switchable, optional 16:9 bezel available
- Serial and parallel remote control capability
- Memory card BKM-12Y option for easy and consistent set-up of monitors
- Supported by Sony Interactive Status Reporting (ISR)

\* BVM-14G5A is an Australian version.

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|                    |                                                                                     |
|--------------------|-------------------------------------------------------------------------------------|
| Mass:              | 24 kg (52 lb 14 oz)                                                                 |
| Power consumption: | 105 W (with Option: 120 W max.)                                                     |
| Dimensions:        | 482 (W) x 280 (H) x 530 (D) mm<br>(19 x 11 $\frac{1}{8}$ x 20 $\frac{7}{8}$ inches) |

---

# BVM-14M4DE (PAL/NTSC/ SECAM/NTSC<sub>4.43</sub>)

*BVM Series*



- 14-inch colour video monitor
- Aspect ratio 4:3 and 16:9 switchable
- EBU phosphors ensure consistent colour reproduction
- HR Trinitron with 800 TV lines resolution at centre
- Stable colour temperature reproduction due to beam current feedback
- SDI input as standard
- Analogue component (Y, R-Y, B-Y or RGB), Y/C and composite video inputs available as standard
- Auto chroma/phase set-up
- On-screen menu in five languages for set-up
- RS-422 serial remote control via optional BKM-103 interface board
- Remote/tally input
- Colour temperature D65/D93/User preset
- Rack mountable with optional rack mounting kit consisting of MB-502B mounting bracket and SLR-102 slide rail



Mass: 17.7 kg (39 lb)  
Power Consumption: 99 W  
Dimensions: 346 (W) x 340 (H) x 431.5 (D) mm  
(13 5/8 x 13 1/2 x 17 inches)

**BVM-9045D** (PAL/NTSC/  
SECAM/NTSC4.43)*BVM Series*

- 9-inch colour video monitor
- Aspect ratio 4:3 and 16:9 switchable with the 16:9 button on the front panel
- HR Trinitron with 450 TV lines resolution at centre
- Colour temperature D65
- Stable colour temperature reproduction due to beam current feedback
- Component serial digital interface terminal
- Analogue component (Y/R-Y/B-Y or RGB), Y/C and composite video inputs
- Analogue component level selectable between BETA and SMPTE/N10 by a rear panel slide switch
- NTSC comb filter
- Accepts external sync and sync on Green
- Tally input
- Blue, H/V delay, Underscan capabilities
- AC/DC power supply capability
- Front panel degauss button
- Wired remote control capability
- Rack mountable with second BVM-9045D or optional blank panel MB-509 using optional MB-520 rack mounting bracket



Mass: 8.4 kg (18 lb 1 oz)  
 Power consumption: AC: 45 W DC: 42 W  
 Dimensions: 217 (W) x 217 (H) x 352.5 (D) mm  
 (8 5/8 x 8 5/8 x 14 inches)

# PVM-2950QM (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>) *PVM Series*



- Cubic style monitor
- Aspect ratio 4:3 and 16:9 switchable
- A high resolution of 600 TV lines
- 3200K/6500K/9300K colour temperature selectable
- Beam current feedback circuit for stability in the colour balance
- On-screen menu for adjustment/operation
- Accepts composite video, Y/C and component (Y/R-Y/B-Y) video signals
- Supplied wireless remote control unit RM-854 controls all monitor functions



Mass: 52 kg (114 lb 10 oz)  
Power consumption: 165 W  
Dimensions: 687 (W) x 538 (H) x 529 (D) mm  
(27 1/8 x 21 1/4 x 20 7/8 inches)

## PVM-20S1WE/20S1WA\* (PAL/NTSC/SECAM/NTSC<sup>4,43</sup>) *PVM Series*



- Widescreen 20-inch viewing colour monitor
- 16:9 aspect ratio CRT
- Black Trinitron with 300 TV lines resolution at centre
- Aspect ratio 16:9 and 4:3 switchable
- High contrast picture reproduction
- Stable colour temperature reproduction due to beam current feedback
- Analogue component (Y, R-Y, B-Y or RGB), Y/C and composite video inputs available as standard
- SDI input available via optional interface kits BKM-101C (video) and BKM-102 (audio)
- Colour temperature D65/D93/User preset (3200 K to 10000 K) selectable
- On-screen menu in five languages for set-up
- User preset function
- Blue, H/V delay, Underscan capabilities
- Auto chroma/phase set-up
- Accepts external sync
- Digital 3-line comb filter
- Auto/manual degaussing
- Rack mountable with optional SLR-103A slide rail rack mounting kit

\* PVM-20S1WA is an Australian version.



|                    |                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------|
| Mass:              | 25 kg (55 lb 2 oz)                                                                                              |
| Power consumption: | 100 W (with SDI: 110 W)                                                                                         |
| Dimensions:        | 482 (W) x 397 (H) x 503 (D) mm<br>(19 x 15 <sup>3</sup> / <sub>4</sub> x 19 <sup>7</sup> / <sub>8</sub> inches) |

## PVM-20M4E/20M4A\* (PAL/NTSC/SECAM/ NTSC<sub>4.43</sub>) *PVM Series*



- HR Trinitron assures a high resolution of 800 TV lines
- Adopts EBU standard phosphor
- Accepts component (Y/R-Y/B-Y), RGB, Y/C and composite signals
- Beam current feedback circuit for stability in the colour balance
- Optional component serial digital interface kits BKM-101C (video)/102 (audio) available
- Aspect ratio 4:3 and 16:9 switchable
- Colour temperature D65/D93/User preset (3200 K to 10000 K) selectable
- On-screen display for adjustment/operation
- User preset function
- Underscan, Blue Only and H/V delay mode available
- Auto chroma/phase set-up
- Accepts external sync
- Auto/manual degaussing
- Minimizes magnetic field emission
- Mountable into a 19-inch EIA standard rack with the optional SLR-103A

\* PVM-20M4A is an Australian version.



Mass: 30.0 kg (66 lb 2 oz)  
 Power consumption: 130 W (with SDI: 140 W)  
 Dimensions: 450 (W) x 458 (H) x 503 (D) mm  
 (17 3/4 x 18 1/8 x 19 7/8 inches)

# PVM-20M2E (PAL/NTSC/ SECAM/NTSC4.43)

*PVM Series*



- High resolution of 600 TV lines with dark tint CRT for high contrast image reproduction
- Accepts component (Y/R-Y/B-Y), RGB, Y/C and composite signals
- Beam current feedback circuit for stability in the colour balance
- Optional component serial digital interface kits BKM-101C (video)/102 (audio) available
- Aspect ratio 4:3 and 16:9 switchable
- Colour temperature D65/D93/User preset (3200 K to 10000 K) selectable
- On-screen display for adjustment/operation
- User preset function
- Underscan, Blue Only and H/V delay mode available
- Auto chroma/phase set-up
- Accepts external sync
- Auto/manual degaussing
- Mountable into a 19-inch EIA standard rack with the optional SLR-103A



Mass: 30.0 kg (66 lb 2 oz)  
 Power consumption: 120 W (with SDI: 130 W)  
 Dimensions: 450 (W) x 458 (H) x 503 (D) mm  
 (17 3/4 x 18 1/8 x 19 7/8 inches )

### PVM-20N6E/20N6A\* (PAL/NTSC/SECAM/ NTSC<sup>4.43</sup>) *PVM Series*



- Resolution of 500 TV lines
- Beam current feedback circuit for stability in the colour balance
- Accepts composite video, Y/C and RGB signals
- Aspect ratio 4:3 and 16:9 switchable
- On-screen menu for adjustment/operation
- Input channel can be selected via REMOTE terminal (Phono)
- Built-in speaker
- Mountable into a 19-inch EIA standard rack with the optional SLR-103A
- One touch recall of last menu used (VOLUME, CONTRAST, BRIGHTNESS, CHROMA and PHASE)

\* PVM-20N6A is an Australian version.



Mass: 28 kg (61 lb 11 oz)  
Power consumption: 105 W  
Dimensions: 449 (W) x 441 (H) x 502 (D) mm  
(17 <sup>11</sup>/<sub>16</sub> x 17 <sup>3</sup>/<sub>8</sub> x 19 <sup>3</sup>/<sub>4</sub> inches)

# PVM-20N5E/20N5A\* (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>) *PVM Series*



- Resolution of 500 TV lines
- Beam current feedback circuit for stability in the colour balance
- Accepts composite video and Y/C signals
- On-screen menu for adjustment/operation
- Built-in speaker
- Mountable into a 19-inch EIA standard rack with the optional SLR-103A
- One touch recall of last menu used (VOLUME, CONTRAST, BRIGHTNESS, CHROMA and PHASE)

\* PVM-20N5A is an Australian version.



Mass: 28 kg (61 lb 11 oz)  
 Power consumption: 105 W  
 Dimensions: 449 (W) x 441 (H) x 502 (D) mm  
 (17 <sup>11</sup>/<sub>16</sub> x 17 <sup>3</sup>/<sub>8</sub> x 19 <sup>3</sup>/<sub>4</sub> inches)

### PVM-14M4E/14M4A\*

(PAL/NTSC/SECAM/ NTSC<sub>4.43</sub>) *PVM Series*



- HR Trinitron assures a high resolution of 800 TV lines
- Adopts EBU standard phosphor
- Accepts component (Y/R-Y/B-Y), RGB, Y/C and composite signals
- Beam current feedback circuit for stability in the colour balance
- Optional component serial digital interface kits BKM-101C (video)/102 (audio) available
- Aspect ratio 4:3 and 16:9 switchable
- Colour temperature D65/D93/User preset (3200 K to 10000 K) selectable
- On-screen display for adjustment/operation
- User preset function
- Underscan, Blue Only and H/V delay mode available
- Auto chroma/phase set-up
- Accepts external sync
- Auto/manual degaussing
- Minimizes magnetic field emission
- Mountable into a 19-inch EIA standard rack with the optional MB-502B and SLR-102

\* PVM-14M4A is an Australian version.



|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Mass:              | 16.7 kg (36 lb 13 oz)                                           |
| Power consumption: | 90 W (with SDI: 99 W)                                           |
| Dimensions:        | 346 (W) x 340 (H) x 431 (D) mm<br>(13 5/8 x 13 1/2 x 17 inches) |

# PVM-14M2E/14M2A\* (PAL/NTSC/SECAM/ NTSC<sup>4.43</sup>) *PVM Series*



- High resolution of 600 TV lines with dark tint CRT for high contrast image reproduction
- Accepts component (Y/R-Y/B-Y), RGB, Y/C and composite signals
- Beam current feedback circuit for stability in the colour balance
- Optional component serial digital interface kits BKM-101C (video)/102 (audio) available
- Aspect ratio 4:3 and 16:9 switchable
- Colour temperature D65/D93/User preset (3200 K to 10000 K) selectable
- On-screen display for adjustment/operation
- User preset function
- Underscan, Blue Only and H/V delay mode available
- Auto chroma/phase set-up
- Accepts external sync
- Auto/manual degaussing
- Mountable into a 19-inch EIA standard rack with the optional MB-502B and SLR-102

\* PVM-14M2A is an Australian version.



|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Mass:              | 16.7 kg (36 lb 13 oz)                                           |
| Power consumption: | 90 W (with SDI: 99 W)                                           |
| Dimensions:        | 346 (W) x 340 (H) x 431 (D) mm<br>(13 5/8 x 13 1/2 x 17 inches) |

# PVM-14N6E/14N6A\* (PAL/NTSC/SECAM/NTSC<sup>4.43</sup>) PVM Series



- Resolution of 500 TV lines
- Beam current feedback circuit for stability in the colour balance
- Accepts composite video, Y/C and RGB signals
- Aspect ratio 4:3 and 16:9 switchable
- On-screen menu for adjustment/operation
- Input channel can be selected via REMOTE terminal (Phono)
- Built-in speaker
- Mountable into a 19-inch EIA standard rack with the optional MB-502B and SLR-102
- One touch recall of last menu used (VOLUME, CONTRAST, BRIGHTNESS, CHROMA and PHASE)

\* PVM-14N6A is an Australian version.



Mass: 15 kg (33 lb 1 oz)  
Power consumption: 80 W  
Dimensions: 346 (W) x 340 (H) x 414 (D) mm  
(13 <sup>5</sup>/<sub>8</sub> x 13 <sup>3</sup>/<sub>8</sub> x 16 <sup>5</sup>/<sub>16</sub> inches)

# PVM-14N5E/14N5A\* (PAL/NTSC/SECAM/ NTSC<sup>4.43</sup>) *PVM Series*



- Resolution of 500 TV lines
- Beam current feedback circuit for stability in the colour balance
- Accepts composite video and Y/C signals
- On-screen menu for adjustment/operation
- Built-in speaker
- Mountable into a 19-inch EIA standard rack with the optional MB-502B and SLR-102
- One touch recall of last menu used (VOLUME, CONTRAST, BRIGHTNESS, CHROMA and PHASE)

\*PVM-20N5A is an Australian version.



Mass: 15 kg (33 lb 1 oz)  
 Power consumption: 80 W  
 Dimensions: 346 (W) x 340 (H) x 414 (D) mm  
 (13 <sup>5</sup>/<sub>8</sub> x 13 <sup>3</sup>/<sub>8</sub> x 16 <sup>5</sup>/<sub>16</sub> inches)

# PVM-9045QM (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>) *PVM Series*



- Aspect ratio is switchable (4:3 and 16:9) with the 16:9 button on the front panel
- High resolution CRT provides 450 TV lines at centre (composite video)
- Beam current feedback circuit for stable colour temperature
- Analogue component level selectable between BETA and SMPTE/N10 by a rear panel slide switch
- NTSC comb filter
- Accepts external sync/sync on Green
- Tally input
- Colour temperature D65
- Blue only, H/V delay, Underscan capability
- Built-in speaker and monitoring amplifier
- AC/DC operation
- Front panel degauss button
- EIA standard rack mountable with a second PVM-9045QM (or an optional blank panel MB-509) by using an optional MB-520 rack mounting bracket



|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Mass:              | Approx. 8.2 kg (18 lb)                                          |
| Power consumption: | AC 43 W, DC 40 W                                                |
| Dimension:         | 217 (W) x 217 (H) x 352.5 (D) mm<br>(8 5/8 x 8 5/8 x 14 inches) |

# PVM-9042QM (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>) *PVM Series*



- Aspect ratio is switchable (4:3 and 16:9) with the 16:9 button on the front panel
- Beam current feedback circuit for stable colour temperature
- Analogue component level selectable between BETA and SMPTE/N10 by a rear panel slide switch
- NTSC comb filter
- Accepts external sync/sync on Green
- Tally input
- Colour temperature D65
- Blue only, H/V delay, Underscan capability
- Built-in speaker and monitoring amplifier
- AC/DC operation
- Front panel degauss button
- EIA standard rack mountable with a second PVM-9042QM (or an optional blank panel MB-509) by using an optional MB-520 rack mounting bracket



|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Mass:              | Approx. 8.2 kg (18 lb)                                          |
| Power consumption: | AC 43 W, DC 40 W                                                |
| Dimension:         | 217 (W) x 217 (H) x 352.5 (D) mm<br>(8 5/8 x 8 5/8 x 14 inches) |

# PVM-9040ME (PAL/SECAM)

*PVM Series*



- Can be used as basic monitoring device
- Beam current feedback circuit for stability in the colour balance
- Composite video or Y/C input
- 19-inch EIA standard rack mountable with a second PVM-9040ME or an optional blank panel MB-509 by using the optional MB-520 rack mounting bracket
- Built-in speaker



Mass: 7.8 kg (17 lb 3 oz)  
Power consumption: 39 W (Typical)  
Dimensions: 217 (W) x 217 (H) x 352.5 (D) mm  
(8 <sup>5</sup>/<sub>8</sub> x 8 <sup>5</sup>/<sub>8</sub> x 14 inches)

# PVM-6041QM (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>)

*PVM Series*


- Suitable for picture confirmation in ENG/EPG application and multiple camera monitoring
- Aspect ratio 4:3 and 16:9 switchable
- Two inputs: Component (Y, R-Y, B-Y or Analogue RGB) input and composite video input
- Beam current feedback circuit for stability in the colour balance
- Accepts external sync and sync on Green
- Blue only, H/V delay, Underscan capability
- AC/DC operation
- Wired remote control capability
- Built-in speaker
- Tally input
- 19-inch EIA standard rack mountable with another two units of PVM-6041QM or two optional blank panel MB-508 by using the optional MB-520 rack mounting bracket



Mass: 5.5 kg (12 lb 2 oz)  
 Power consumption: AC: 40 W (Typical), DC: 40 W  
 Dimensions: 146 (W) x 173 (H) x 352.5 (D) mm  
 (5 <sup>3</sup>/<sub>4</sub> x 6 <sup>7</sup>/<sub>8</sub> x 14 inches)

## PGM-200R1E/200R1A\* *PGM Series*



- Cubic style colour graphic monitor
- Accepts VGA signals (fH: 31.5 kHz, fV: 60 Hz/70 Hz)
- The optional BKM-201SC Scan Converter Adaptor enables the monitor to serve as a multi-frequency monitor (capture range: fH 15.6 kHz to 85 kHz, fV 50 Hz to 120 Hz)
- Active loop-through output
- ID remote control
- Wide range power supply (switchable between 100 to 120V and 220 to 240V AC)



\* PGM-200R1A is an Australian version.

### BKM-201SC



- High performance scan converter for PGM-200R1E/200R1A
- Accepts signals with fH 15.6 to 85.0 kHz
- Advanced scan conversion technologies: Variable and offset phase sampling, Four-Line Vertical Interpolation
- Picture STILL/ZOOM function
- Memory save/load
- On-Screen Display Menu

Mass: 55 kg (121 lb 4 oz)  
Power consumption: Max. 183 W (with BKM-201SC: 208.5 W max.)  
Dimensions: 687 (W) x 538 (H) x 520 (D) mm  
(27 1/8 x 21 1/4 x 20 1/2 inches)

**PGM-200R2E***PGM Series*

- Capable of displaying VGA graphics (fH 31.5 kHz, fV 60 Hz), line-doubled NTSC signals (fH 31.5 kHz, fV 60 Hz), and line-doubled PAL signals (fH 31.25 kHz, fV 50 Hz)
- Optional Sony BKM-202FN Cooling Fan can be installed to provide extra ventilation for enclosed areas such as custom-built cabinets (note: Call your authorized Sony dealer for installation details)
- Optional Sony RM-921 Remote Controller
- Wide range power supply (switchable between 100 to 120 V and 220 to 240 V AC)



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|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| Mass:              | Approx. 51.5 kg (113 lb 8 oz)                                       |
| Power consumption: | Max. 183 W                                                          |
| Dimensions:        | 687 (W) x 538 (H) x 520 (D) mm<br>(27 1/8 x 21 1/4 x 20 1/2 inches) |

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# PFM-510A2WE\*1/510A2WG *PFM Series*



- 16:9 aspect, 42-inch diagonal Plasma Display Panel
- 1024 x 1024 pixels resolution, 16.8 million colours
- Accepts video (PAL/NTSC/SECAM/NTSC4.43/PAL60 and DTV\*2) and computer signals up to UXGA with new high performance scan converter
- Option slot
- On-Screen Display in six languages
- Carrying handles and unique retractable feet for easy handling capability
- Self diagnosis function, detachable power supply block and easy accessible cooling fan for easy maintenance access
- Various remote control capabilities: supplied RM-921 Remote commander, Control S and RS-232C
- 7 W + 7 W built-in amplifier
- Audio monitor out

\*1 PFM-510A2WE requires BKM-500 to accept input signals.

\*2 1080/24PsF, 1080/50I, 575/50P, 480/60P, 1080/60I and 720/60P DTV signals are supported.



(L)

(R)

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Mass:              | Approx. 45 kg (99 lb 3 oz)                                      |
| Power consumption: | Max. 360 W                                                      |
| Dimensions:        | 1036 (W) x 636 (H) x 152 (D) mm<br>(40 3/4 x 25 x 6 3/4 inches) |

# PFM-500A3WE\*1/500A3WG *PFM Series*



- 16:9 aspect, 42-inch diagonal Plasma Display Panel
- 852 x 480 pixels resolution, 16.8 million colours
- Accepts video (PAL/NTSC/SECAM/NTSC4.43/PAL60 and DTV\*2) and computer signals up to UXGA with new high performance scan converter
- Option slot
- On-Screen Display in six languages
- Carrying handles and unique retractable feet for easy handling capability
- Self diagnosis function, detachable power supply block and easy accessible cooling fan for easy maintenance access
- Various remote control capabilities: supplied RM-921 Remote commander, Control S and RS-232C
- 7 W + 7 W built-in amplifier
- Audio monitor out

\*1 PFM-500A3WE requires BKM-500 to accept input signals.

\*2 1080/24PsF, 1080/50I, 575/50P, 480/60P, 1080/60I and 720/60P DTV signals are supported.



(L)

(R)

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Mass:              | Approx. 45 kg (99 lb 3 oz)                                      |
| Power consumption: | Max. 360 W                                                      |
| Dimensions:        | 1036 (W) x 636 (H) x 152 (D) mm<br>(40 3/4 x 25 x 6 3/4 inches) |

# LMD-1041



- 10.4-inch (visible size) Liquid Crystal Display (LCD) with long-life backlight
- Thin Film Transistor a-Si Active Matrix LCD panel with 640 x 480 dots (RGB), Analogue full-color
- Accepts VGA, Macintosh® 13-inch mode and PAL\*/NTSC signals
- A high light output of 200 nit
- An ID remote control function that allows the supplied controller RM-LMD1041 to control individual monitors or, by setting groups of monitors to the same ID, simultaneously control the same functions on all the monitors in a group
- RS-232C (SIRCS, VISCA) control capability
- On-screen display for adjustment/operation
- Built-in stereo speaker
- Supplied with a stand

\* Line reduction for PAL signals.



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|                    |                                                                      |
|--------------------|----------------------------------------------------------------------|
| Mass:              | 2 kg (4 lb 6 oz) (stand not included)                                |
| Power consumption: | Max. 28 W                                                            |
| Dimensions:        | 305 (W) x 215.3 (H) x 57.4 (D) mm<br>(12 1/3 x 8 1/2 x 2 3/8 inches) |

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## PVM-146E (CCIR/EIA)

*PVM Series*



- Aspect ratio 4:3 and 16:9 switchable
- Incorporates a CRT with D65
- A high resolution of 1000 TV lines at centre
- H/V delay, Underscan capability
- Equipped with a notch filter
- Built-in speaker for audio monitoring
- Accepts external sync
- 19-inch EIA Standard rack mountable with the optional mounting bracket MB-502B and slide rail kit SLR-102
- Tally input



Mass: 11 kg (24 lb 4 oz)  
 Power consumption: 30 W  
 Dimensions: 346 (W) x 340 (H) x 330 (D) mm  
 (13 5/8 x 13 1/2 x 13 inches)

### PVM-145E (CCIR/EIA)

*PVM Series*



- A high resolution of 1000 TV lines at centre
- Built-in speaker for audio monitoring
- Accepts external sync
- 19-inch EIA Standard rack mountable with the optional mounting bracket MB-502B and side rail kit SLR-102



Mass: 11 kg (24 lb 4 oz)  
Power consumption: 30 W  
Dimensions: 346 (W) x 340 (H) x 330 (D) mm  
(13 5/8 x 13 1/2 x 13 inches)

## PVM-96E (CCIR/EIA)

*PVM Series*



- Aspect ratio 4:3 and 16:9 switchable
- Incorporates a CRT with D65
- A high resolution of 900 TV lines at centre
- H/V delay, Underscan capability
- Equipped with a notch filter
- Built-in speaker for audio monitoring
- Accepts external sync
- 19-inch EIA Standard rack mountable with a second PVM-96E or an optional blank panel MB-509 by using the optional MB-520 rack mounting bracket
- Tally input



|                    |                                                                  |
|--------------------|------------------------------------------------------------------|
| Mass:              | 5.5 kg (12 lb 2 oz)                                              |
| Power consumption: | 28 W                                                             |
| Dimensions:        | 217 (W) x 218 (H) x 250 (D) mm<br>(8 5/8 x 8 5/8 x 8 7/8 inches) |

PVM-95E (CCIR/EIA)

PVM Series



- A high resolution of 900 TV lines at centre
- Built-in speaker for audio monitoring
- Accepts external sync
- EIA Standard rack mountable with a second PVM-95E or an optional blank panel MB-509 by using the optional MB-520 rack mounting bracket



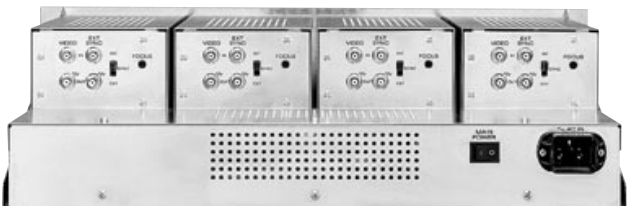
|                    |                                                                  |
|--------------------|------------------------------------------------------------------|
| Mass:              | 5.5 kg (12 lb 2 oz)                                              |
| Power consumption: | 28 W                                                             |
| Dimensions:        | 217 (W) x 218 (H) x 250 (D) mm<br>(8 5/8 x 8 5/8 x 8 7/8 inches) |

## PVM-4B1E (CCIR/EIA)

*PVM Series*



- Ideal for camera monitoring in video studio and surveillance systems with multiple camera installations
- Compatible with CCIR and EIA systems (automatically selected)
- High resolution of 500 TV lines
- Stable picture reproduction with the high voltage regulation circuit
- Accepts an external sync signal
- Loop-through video and sync terminals with automatic 75  $\Omega$  termination
- Can be mounted in a 19-inch EIA standard rack
- Individual power and individual controls available



Mass: 11.7 kg (25 lb 13 oz)  
 Power consumption: 59 W  
 Dimensions: 483 (W) x 133 (H) x 356 (D) mm  
 (19 1/8 x 5 1/4 x 14 1/8 inches)

# ADN-8080 (PAL/NTSC/SECAM)



- 16:9 aspect, 80-inch LED-based display for indoor advertising
- 8 mm pitch Surface Mounted Device type LEDs, with each pixel made up of individual R, G and B LEDs
- High brightness of 1,000 cd/m<sup>2</sup> for indoor use
- 224 x 120 pixel resolution
- Signal processor and screen in one “Plug and Play” system
- High contrast and reliability assured with the “Black Mask” on the screen surface
- Lightweight and compact
- Full 10-bit digital processing (1024 colour gradation)
- Advanced colour reproduction assured with the colour compensation circuit
- On-screen menu for adjustment/setting
- Various remote control capabilities: supplied remote commander RM-JJ100, Control S or RS-422
- Optional accessories: BKJ-100 and RM-PJ10



Mass: Approx. 110 kg (50 lb)  
Dimensions: Approx. 1880 (W) x 1060 (H) x 260 (D) mm  
(74 1/8 x 41 3/4 x 10 1/4 inches)

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## BVM-D Series Monitor Accessories

|                         |                                                                                                                                         | BVM-D32E1WE/D32E1WA | BVM-D24E1WE/D24E1WA | BVM-D20F1E/D20F1A |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|-------------------|
| BKM-20D* <sup>1</sup>   | Serial Digital Interface 4:2:2 Decoder Adaptor<br>(3 digital active loop-through/3 analogue composite loop-through inputs)              | 0                   | 0                   | 0                 |
| BKM-21D* <sup>1</sup>   | Serial Digital Interface Multi Decoder Adaptor<br>(3 digital active loop-through/3 analogue composite loop-through inputs)              | 0                   | 0                   | 0                 |
| BKM-22X                 | Serial Digital Interface Expansion Adaptor (NTSC/PAL/SECAM)<br>(3 digital active loop-through/3 analogue composite loop-through inputs) | 0                   | 0                   | 0                 |
| BKM-24N* <sup>1</sup>   | NTSC Decoder Adaptor<br>(6 analogue composite loop-through inputs)                                                                      | 0                   | 0                   | 0                 |
| BKM-25P* <sup>1</sup>   | PAL Decoder Adaptor<br>(6 analogue composite loop-through inputs)                                                                       | 0                   | 0                   | 0                 |
| BKM-26M* <sup>1</sup>   | PAL-M Decoder Adaptor<br>(6 analogue composite loop-through inputs)                                                                     | 0                   | 0                   | 0                 |
| BKM-27T* <sup>1</sup>   | Tri-standard Decoder Adaptor<br>(6 analogue composite loop-through inputs)                                                              | 0                   | 0                   | 0                 |
| BKM-28X                 | Analogue Video Input Expansion Adaptor<br>(6 analogue composite loop-through inputs)                                                    | 0                   | 0                   | 0                 |
| BKM-41HD                | HD SDI Input Adaptor<br>(1 digital with monitor out/1 analogue component loop-through inputs)                                           | 0                   | 0                   | 0                 |
| BKM-42HD                | HD SDI Input Adaptor<br>(2 digital with monitor out/1 analogue component loop-through inputs)                                           | 0                   | 0                   | 0                 |
| BKM-48X                 | HD Analogue Input Expansion Adaptor<br>(6 analogue composite loop-through inputs)                                                       | 0                   | 0                   | 0                 |
| BKM-142HD               | HD SDI Input Adaptor<br>(2 digital with 1 monitor out inputs)                                                                           | —                   | —                   | —                 |
| BKM-120D                | SDI 4:2:2 Input Adaptor<br>(2 digital active loop-through inputs)                                                                       | —                   | —                   | —                 |
| BKM-127W                | NTSC/PAL Input Adaptor<br>(2 analogue component loop-through/1 Y/C loop-through inputs)                                                 | —                   | —                   | —                 |
| BKM-129X                | Analogue Component Input Adaptor<br>(1 analogue component loop-through/1 ext sync loop-through inputs)                                  | —                   | —                   | —                 |
| BKM-10R                 | Control Unit                                                                                                                            | 0                   | 0                   | 0                 |
| BKM-11R                 | Control Unit                                                                                                                            | 0                   | 0                   | 0                 |
| BKM-12Y* <sup>2</sup>   | Memory Card                                                                                                                             | 0                   | 0                   | 0                 |
| BKM-14L                 | Auto Set-up Probe                                                                                                                       | 0                   | 0                   | 0                 |
| BKM-34H                 | Control Unit BKM-10R Attachment Kit for 24" Monitors                                                                                    | —                   | 0                   | —                 |
| BKM-32H                 | Control Unit BKM-10R Attachment Kit for 20" Monitors                                                                                    | —                   | —                   | 0                 |
| BKM-30E20* <sup>3</sup> | 19-inch Rack Mount Kit for 20" Monitors                                                                                                 | —                   | —                   | 0                 |
| BKM-31E14               | 19-inch Rack Mount Kit for 14" Monitors                                                                                                 | —                   | —                   | —                 |
| BKM-30E14               | 19-inch Rack Mount Kit for 14" Stand-alone Monitors                                                                                     | —                   | —                   | —                 |
| MB-509                  | Mounting Panel for EIA Standard Rack (5U) for 9" Stand-alone Monitors                                                                   | —                   | —                   | —                 |
| MB-510                  | 19-inch Rack Mount Kit for BKM-10R                                                                                                      | —                   | 0                   | 0                 |
| MB-519                  | Mounting Panel for EIA Standard Rack (4U) for 9" Display Unit Monitors                                                                  | —                   | —                   | —                 |
| MB-520                  | 19-inch Rack Mount Kit for 9" Monitors                                                                                                  | —                   | —                   | —                 |
| VF-508                  | Monitor ENG Kit<br>(Hood & Rear Protector)                                                                                              | —                   | —                   | —                 |
| RCC-5G/10G/30G          | Control Cable for RS-485/422 Serial Remote Control<br>(9-pin)                                                                           | 0                   | 0                   | 0                 |
| BP-L60A                 | Rechargeable Lithium-ion Battery Pack                                                                                                   | —                   | —                   | —                 |
| BP-L90A                 | Rechargeable Lithium-ion Battery Pack                                                                                                   | —                   | —                   | —                 |

## Acceptable Formats for BVM-D Series Monitors

| System                   | Horizontal scanning frequency | Total lines per frame | Active lines per frame | Frame rate* <sup>1</sup> (Hz) | Scanning format | Aspect     |  |
|--------------------------|-------------------------------|-----------------------|------------------------|-------------------------------|-----------------|------------|--|
| 575/50I (PAL)            | 15.625                        | 625                   | 575                    | 25                            | 2:1 Interlace   | 16:9 / 4:3 |  |
| 480/60I (NTSC)           | 15.734                        | 525                   | 483                    | 30                            | 2:1 Interlace   | 16:9 / 4:3 |  |
| 575/50P                  | 27.000                        | 625                   | 575                    | 50                            | Progressive     | 16:9 / 4:3 |  |
| 480/60P                  | 28.125                        | 525                   | 483                    | 60                            | Progressive     | 16:9 / 4:3 |  |
| 1080/24PsF* <sup>2</sup> | 31.250                        | 1125                  | 1080                   | 24                            | 2:1 Interlace   | 16:9       |  |
| 1080/50I                 | 31.469                        | 1125                  | 1080                   | 25                            | 2:1 Interlace   | 16:9       |  |
| 1035/60I                 | 33.750                        | 1125                  | 1035                   | 30                            | 2:1 Interlace   | 16:9       |  |
| 1080/60I                 | 33.750                        | 1125                  | 1080                   | 30                            | 2:1 Interlace   | 16:9       |  |
| 720/60P                  | 45.000                        | 750                   | 720                    | 60                            | Progressive     | 16:9       |  |

|  | BVM-D14H1E/D14H1A | BVM-D14H5E/D14H5A | BVM-D9H1E/D9H1A | BVM-D9H5E/D9H5A |                |
|--|-------------------|-------------------|-----------------|-----------------|----------------|
|  | —                 | —                 | —               | —               | BKM-20D        |
|  | —                 | —                 | —               | —               | BKM-21D        |
|  | —                 | —                 | —               | —               | BKM-22X        |
|  | —                 | —                 | —               | —               | BKM-24N        |
|  | —                 | —                 | —               | —               | BKM-25P        |
|  | —                 | —                 | —               | —               | BKM-26M        |
|  | —                 | —                 | —               | —               | BKM-27T        |
|  | —                 | —                 | —               | —               | BKM-28X        |
|  | —                 | —                 | —               | —               | BKM-41HD       |
|  | —                 | —                 | —               | —               | BKM-42HD       |
|  | —                 | —                 | —               | —               | BKM-48X        |
|  | 0                 | 0                 | 0               | 0               | BKM-142HD      |
|  | 0                 | 0                 | 0               | 0               | BKM-120D       |
|  | 0                 | 0                 | 0               | 0               | BKM-127W       |
|  | 0                 | 0                 | 0               | 0               | BKM-129X       |
|  | 0                 | —                 | 0               | —               | BKM-10R        |
|  | 0                 | 0                 | 0               | 0               | BKM-11R        |
|  | —                 | —                 | —               | —               | BKM-12Y        |
|  | 0                 | 0                 | 0               | 0               | BKM-14L        |
|  | —                 | —                 | —               | —               | BKM-34H        |
|  | —                 | —                 | —               | —               | BKM-32H        |
|  | —                 | —                 | —               | —               | BKM-30E20      |
|  | 0                 | —                 | —               | —               | BKM-31E14      |
|  | —                 | 0                 | —               | —               | BKM-30E14      |
|  | —                 | —                 | —               | 0               | MB-509         |
|  | 0                 | —                 | —               | —               | MB-510         |
|  | —                 | —                 | 0               | —               | MB-519         |
|  | —                 | —                 | 0               | 0               | MB-520         |
|  | —                 | —                 | 0               | 0               | VF-508         |
|  | 0                 | 0                 | 0               | 0               | RCC-5G/10G/30G |
|  | —                 | —                 | 0               | 0               | BP-L60A        |
|  | —                 | —                 | 0               | 0               | BP-L90A        |

\*1 Each decoder adaptor can also function as an expansion adaptor.

\*2 Utilized with BKM-10R/11R.

\*3 BKM-30E20 can also be used with BKM-32H.

0 = Optional

— = Not Applicable

|  | Standard                |
|--|-------------------------|
|  | ITU 601                 |
|  | ITU 601                 |
|  | —                       |
|  | SMPTE 293M              |
|  | —                       |
|  | SMPTE 274M              |
|  | BTA S-001B              |
|  | SMPTE 274M / BTA S-001B |
|  | SMPTE 296M              |

\*1 Each of the rates is also compatible with 1/1.001.

\*2 The 1080/24PsF signal, consisting of 24 progressive frames per second, is displayed as a 48 Hz interlaced picture at the full 1920 x 1080 resolution.

BVM Monitor Accessories

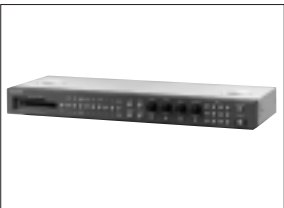
|                                                                                                                                                    | BVM-20E1E | BVM-20F1E | BVM-20G1E |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|--|
| BKM-20D<br>Serial Digital Interface 4:2:2 Decoder Adaptor<br>(3 digital active loop-through/3 analogue composite loop-through inputs)              | 0*1       | 0*1       | 0         |  |
| BKM-21D<br>Serial Digital Interface Multi Decoder Adaptor<br>(3 digital active loop-through/3 analogue composite loop-through inputs)              | 0*1       | 0*1       | 0         |  |
| BKM-22X<br>Serial Digital Interface Expansion Adaptor (NTSC/PAL/SECAM)<br>(3 digital active loop-through/3 analogue composite loop-through inputs) | 0         | 0         | —         |  |
| BKM-24N<br>NTSC Decoder Adaptor<br>(6 analogue composite loop-through inputs)                                                                      | 0*1       | 0*1       | 0         |  |
| BKM-25P<br>PAL Decoder Adaptor<br>(6 analogue composite loop-through inputs)                                                                       | 0*1       | 0*1       | 0         |  |
| BKM-26M<br>PAL-M Decoder Adaptor<br>(6 analogue composite loop-through inputs)                                                                     | 0*1       | 0*1       | 0         |  |
| BKM-27T<br>Tri-standard Decoder Adaptor<br>(6 analogue composite loop-through inputs)                                                              | 0*1       | 0*1       | 0         |  |
| BKM-28X<br>Analogue Video Input Expansion Adaptor<br>(6 analogue composite loop-through inputs)                                                    | 0         | 0         | 0         |  |
| BKM-48X<br>HD Analogue Input Expansion Adaptor<br>(6 analogue composite loop-through inputs)                                                       | 0         | 0         | 0         |  |
| BKM-10R<br>Control Unit                                                                                                                            | 0         | 0         | 0         |  |
| BKM-11R<br>Control Unit                                                                                                                            | 0         | 0         | 0         |  |
| BKM-12Y<br>Memory Card                                                                                                                             | 0*2       | 0*2       | 0*2       |  |
| BKM-14L<br>Auto Set-up Probe                                                                                                                       | 0         | 0         | 0         |  |
| BKM-32H<br>Control Unit BKM-10R Attachment Kit                                                                                                     | 0         | 0         | 0         |  |
| BKM-33H20<br>16:9 Mask                                                                                                                             | 0         | 0         | 0         |  |
| BKM-33H14<br>16:9 Mask                                                                                                                             | —         | —         | —         |  |
| BKM-30E20*3<br>19-inch EIA standard Rack Mount Kit                                                                                                 | 0         | 0         | 0         |  |
| BKM-31E14<br>19-inch EIA standard Rack Mount Kit                                                                                                   | —         | —         | —         |  |
| BKM-30E14<br>19-inch EIA standard Rack Mount Kit                                                                                                   | —         | —         | —         |  |
| MB-510*4<br>19-inch EIA standard Rack Mount Kit                                                                                                    | 0         | 0         | 0         |  |
| RCC-5G/10G/30G<br>Control Cable for RS-485/422 Serial Remote Control<br>(9-pin)                                                                    | 0         | 0         | 0         |  |

\*1 Each decoder adaptor can also function as an expansion adaptor.

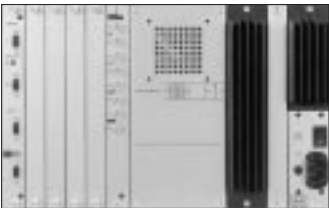
\*2 Utilized with BKM-10R/11R.

\*3 BKM-30E20 can also be used with BKM-32H.

\*4 Utilized with BKM-10R.



Control unit BKM-10R



Rear panel of BVM-14E5E

|  | BVM-14E1E | BVM-14E5E | BVM-14F1E | BVM-14F5E | BVM-14G1E | BVM-14G5E |                |
|--|-----------|-----------|-----------|-----------|-----------|-----------|----------------|
|  | 0*        | 0*        | 0*        | 0*        | 0         | 0         | BKM-20D        |
|  | 0*        | 0*        | 0*        | 0*        | 0         | 0         | BKM-21D        |
|  | 0         | 0         | 0         | 0         | —         | —         | BKM-22X        |
|  | 0*        | 0*        | 0*        | 0*        | 0         | 0         | BKM-24N        |
|  | 0*        | 0*        | 0*        | 0*        | 0         | 0         | BKM-25P        |
|  | 0*        | 0*        | 0*        | 0*        | 0         | 0         | BKM-26M        |
|  | 0*        | 0*        | 0*        | 0*        | 0         | 0         | BKM-27T        |
|  | 0         | 0         | 0         | 0         | 0         | 0         | BKM-28X        |
|  | 0         | 0         | 0         | 0         | 0         | 0         | BKM-48X        |
|  | 0         | —         | 0         | —         | 0         | —         | BKM-10R        |
|  | 0         | 0         | 0         | 0         | 0         | 0         | BKM-11R        |
|  | 0*        | 0         | 0*        | 0         | 0*        | 0         | BKM-12Y        |
|  | 0         | 0         | 0         | 0         | 0         | 0         | BKM-14L        |
|  | —         | —         | —         | —         | —         | —         | BKM-32H        |
|  | —         | —         | —         | —         | —         | —         | BKM-33H20      |
|  | 0         | 0         | 0         | 0         | 0         | 0         | BKM-33H14      |
|  | —         | —         | —         | —         | —         | —         | BKM-30E20      |
|  | 0         | —         | 0         | —         | 0         | —         | BKM-31E14      |
|  | —         | 0         | —         | 0         | —         | 0         | BKM-30E14      |
|  | 0         | —         | 0         | —         | 0         | —         | MB-510         |
|  | 0         | 0         | 0         | 0         | 0         | 0         | RCC-5G/10G/30G |

0 = Optional — = Not Applicable

## Optional Accessories for BVM-14M4DE/9045D

|          |                                            | BVM-14M4DE | BVM-9045D |
|----------|--------------------------------------------|------------|-----------|
| BKM-102  | Serial Digital Interface Kit (audio)       | 0          | —         |
| BKM-103  | RS-422 Serial Remote Control Kit           | 0          | —         |
| MB-502B  | 19-inch EIA standard Rack Mounting Bracket | 0          | —         |
| MB-509   | Blank Panel                                | —          | 0         |
| MB-520   | 19-inch EIA standard Rack Mounting Bracket | —          | 0         |
| SLR-102* | Slide Rail Kit                             | 0          | —         |
| DCC-XLR4 | Car Battery Cord                           | —          | 0         |
| DC-L10   | Battery Adaptor                            | —          | 0         |

\* SLR-102 is used with the MB-502B.

0 = Optional — = Not Applicable

PVM/PGM/PFM/LCD Monitor Accessories

|                                                               | PVM-2050QM | PVM-2051WE/2051WA | PVM-20M4E/20M4A | PVM-20M2E | PVM-20N6E/20N6A | PVM-20N5E/20N5A | PVM-14M4E/14M4A | PVM-14M2E/14M2A | PVM-14N6E/14N6A | PVM-14N5E/14N5A |
|---------------------------------------------------------------|------------|-------------------|-----------------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| BKM-101C<br>Component Serial Digital Interface Kit (video)    | —          | 0                 | 0               | 0         | —               | —               | 0               | 0               | —               | —               |
| BKM-102<br>Serial Digital Interface Kit (audio)               | —          | 0                 | 0               | 0         | —               | —               | 0               | 0               | —               | —               |
| BKM-103<br>Serial Remote Control Kit for RS-422               | —          | 0                 | 0               | 0         | —               | —               | 0               | 0               | —               | —               |
| BKM-201SC<br>Scan Converter Adaptor                           | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| BKM-202FN<br>Cooling Fan Unit                                 | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| BKM-501D<br>SD1 4:2:2 Input Adaptor                           | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| MB-502B<br>EIA standard Rack Mounting Bracket                 | —          | —                 | —               | —         | —               | —               | 0               | 0               | 0               | 0               |
| MB-508<br>Mounting Attachment                                 | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| MB-509<br>Mounting Attachment                                 | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| MB-514<br>Wall-hanging Bracket                                | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| MB-520<br>19" Rack Mount Kit                                  | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| VF-504<br>Monitor ENG Kit<br>(monitor hood and cord reel)     | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| VF-505<br>Monitor ENG Kit<br>(monitor hood and cord reel)     | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| SLR-102<br>Slide Rail Kit                                     | —          | —                 | —               | —         | —               | —               | 0               | 0               | 0               | 0               |
| SLR-103A<br>Slide Rail                                        | —          | 0                 | 0               | 0         | 0               | 0               | —               | —               | —               | —               |
| SS-X7A<br>Two-way bass reflex Speaker System                  | 0          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| SS-X500A<br>Speaker System                                    | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| TU-1040E<br>TV Tuner Unit                                     | 0          | 0                 | 0               | 0         | 0               | 0               | 0               | 0               | 0               | 0               |
| DC-L10<br>Battery Adaptor                                     | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| NP-1B<br>Rechargeable Battery Pack<br>(supplies DC 12V)       | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| BP-90A<br>Rechargeable Battery Pack<br>(supplies DC 12V)      | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| DC-210<br>Battery Case for BP-90A                             | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| BC-1WDCE<br>Battery Charger for four NP-1B                    | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| BC-410CE<br>Battery Charger<br>for four NP-1B and four BP-90A | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |
| DCC-XLR4<br>Car Battery Cord                                  | —          | —                 | —               | —         | —               | —               | —               | —               | —               | —               |

\* Only when BKM-201SC is installed.

|  | PVM-9045QM | PVM-9042QM | PVM-9040ME | PVM-6041QM | PGM-200R1E/200R1A | PGM-200R2E | PFM-510A2WE/510A2WG | PFM-500A3WE/500A3WG | LMD-1041 | PVM-146E | PVM-145E | PVM-96E | PVM-95E | PVM-4B1E |           |
|--|------------|------------|------------|------------|-------------------|------------|---------------------|---------------------|----------|----------|----------|---------|---------|----------|-----------|
|  | —          | —          | —          | —          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | BKM-101C  |
|  | —          | —          | —          | —          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | BKM-102   |
|  | —          | —          | —          | —          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | BKM-103   |
|  | —          | —          | —          | —          | 0                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | BKM-201SC |
|  | —          | —          | —          | —          | 0                 | 0          | —                   | —                   | —        | —        | —        | —       | —       | —        | BKM-202FN |
|  | —          | —          | —          | —          | —                 | —          | 0                   | 0                   | —        | —        | —        | —       | —       | —        | BKM-501D  |
|  | —          | —          | —          | —          | —                 | —          | —                   | —                   | —        | 0        | 0        | —       | —       | —        | MB-502B   |
|  | —          | —          | —          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | MB-508    |
|  | 0          | 0          | 0          | —          | —                 | —          | —                   | —                   | —        | —        | —        | 0       | 0       | —        | MB-509    |
|  | —          | —          | —          | —          | —                 | —          | 0                   | 0                   | —        | —        | —        | —       | —       | —        | MB-514    |
|  | 0          | 0          | 0          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | 0       | 0       | —        | MB-520    |
|  | —          | —          | —          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | VF-504    |
|  | 0          | 0          | —          | —          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | VF-505    |
|  | —          | —          | —          | —          | —                 | —          | —                   | —                   | —        | 0        | 0        | —       | —       | —        | SLR-102   |
|  | —          | —          | —          | —          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | SLR-103A  |
|  | —          | —          | —          | —          | 0                 | —          | 0                   | 0                   | —        | —        | —        | —       | —       | —        | SS-X7A    |
|  | —          | —          | —          | —          | —                 | —          | 0                   | 0                   | —        | —        | —        | —       | —       | —        | SS-X500A  |
|  | 0          | 0          | 0          | 0          | 0*                | —          | 0                   | 0                   | 0        | 0        | 0        | 0       | 0       | 0        | TU-1040E  |
|  | 0          | 0          | —          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | DC-L10    |
|  | 0          | 0          | —          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | NP-1B     |
|  | 0          | 0          | —          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | BP-90A    |
|  | 0          | 0          | —          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | DC-210    |
|  | 0          | 0          | —          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | BC-1WDCE  |
|  | 0          | 0          | —          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | BC-410CE  |
|  | 0          | 0          | —          | 0          | —                 | —          | —                   | —                   | —        | —        | —        | —       | —       | —        | DCC-XLR4  |

0 = Optional      — = Not Applicable

Monitor Cross Reference Chart

| Application             | CRT Size<br>(diagonal,<br>measure) | Model<br>Name         | Standard                    | Horizontal<br>Resolution<br>(TV lines) | Underscan | Blue Only | H/V Delay | Video<br>Inputs<br>(BNC) |  |
|-------------------------|------------------------------------|-----------------------|-----------------------------|----------------------------------------|-----------|-----------|-----------|--------------------------|--|
| Colour                  |                                    |                       |                             |                                        |           |           |           |                          |  |
| Programme<br>Production | 20-inch                            | PVM-20M4E/<br>20M4A   | PAL/NTSC/<br>SECAM/NTSC4.43 | 800                                    | Y         | Y         | Y         | 2*1                      |  |
|                         |                                    | PVM-20M2E             | PAL/NTSC/<br>SECAM/NTSC4.43 | 600                                    | Y         | Y         | Y         | 2*1                      |  |
|                         |                                    | PVM-20N6E/<br>20N6A   | PAL/NTSC/<br>SECAM/NTSC4.43 | 500                                    | N         | N         | N         | 2*1                      |  |
|                         |                                    | PVM-20N5E/<br>20N5A   | PAL/NTSC/<br>SECAM/NTSC4.43 | 500                                    | N         | N         | N         | 2*1                      |  |
|                         | 14-inch                            | PVM-14M4E/<br>14M4A   | PAL/NTSC/<br>SECAM/NTSC4.43 | 800                                    | Y         | Y         | Y         | 2*1                      |  |
|                         |                                    | PVM-14M2E/<br>14M2A   | PAL/NTSC/<br>SECAM/NTSC4.43 | 600                                    | Y         | Y         | Y         | 2*1                      |  |
|                         |                                    | PVM-14N6E/<br>14N6A   | PAL/NTSC/<br>SECAM/NTSC4.43 | 500                                    | N         | N         | N         | 2*1                      |  |
|                         |                                    | PVM-14N5E/<br>14N5A   | PAL/NTSC/<br>SECAM/NTSC4.43 | 500                                    | N         | N         | N         | 2*1                      |  |
|                         | 10.4-inch                          | LMD-1041              | PAL/NTSC                    | 450                                    | Y         | N         | N         | 1                        |  |
|                         | 9-inch                             | PVM-9045QM            | PAL/NTSC/<br>SECAM/NTSC4.43 | 450                                    | Y         | Y         | Y         | 2*1                      |  |
|                         |                                    | PVM-9042QM            | PAL/NTSC/<br>SECAM/NTSC4.43 | 250                                    | Y         | Y         | Y         | 2*1                      |  |
|                         |                                    | PVM-9040ME            | PAL/SECAM                   | 250                                    | N         | N         | N         | 1*1                      |  |
|                         | 6-inch                             | PVM-6041QM            | PAL/NTSC/<br>SECAM/NTSC4.43 | 250                                    | Y         | Y         | Y         | 1                        |  |
| Presentation            | 29-inch                            | PVM-2950QM            | PAL/NTSC/<br>SECAM/NTSC4.43 | 600                                    | N         | N         | N         | 2*1                      |  |
|                         | 20-inch<br>(16:9)                  | PVM-20S1WE/<br>20S1WA | PAL/NTSC/<br>SECAM/NTSC4.43 | 300                                    | Y         | Y         | Y         | 2*1                      |  |
| B/W                     |                                    |                       |                             |                                        |           |           |           |                          |  |
|                         | 14-inch                            | PVM-146E              | CCIR/EIA                    | 1000                                   | Y         | N         | Y         | 2                        |  |
|                         |                                    | PVM-145E              | CCIR/EIA                    | 1000                                   | N         | N         | N         | 2                        |  |
|                         | 9-inch                             | PVM-96E               | CCIR/EIA                    | 900                                    | Y         | N         | Y         | 2                        |  |
|                         |                                    | PVM-95E               | CCIR/EIA                    | 900                                    | N         | N         | N         | 2                        |  |
|                         | 4-inch                             | PVM-4B1E*4            | CCIR/EIA                    | 500                                    | N         | N         | N         | 1                        |  |

Y = Yes  
N = No  
D15 = D-Sub 15-pin

|  | Y/C<br>(S Video)<br>Inputs | RGB<br>Inputs<br>(BNC) | Y/R-Y/B-Y<br>Inputs<br>(BNC) | Computer<br>Inputs<br>(Multi-<br>connector) | External<br>Sync<br>Input | Audio<br>Inputs | Speaker | Tally<br>Input | Power | Power<br>Consump-<br>tion (W) |
|--|----------------------------|------------------------|------------------------------|---------------------------------------------|---------------------------|-----------------|---------|----------------|-------|-------------------------------|
|  | 1*1                        | 1                      | 1                            | N                                           | Y                         | 4               | Y       | Y              | AC    | 130                           |
|  | 1*1                        | 1                      | 1                            | N                                           | Y                         | 4               | Y       | Y              | AC    | 120                           |
|  | 1*1                        | 1                      | N                            | N                                           | N*2                       | 3               | Y       | N              | AC    | 105                           |
|  | 1*1                        | N                      | N                            | N                                           | N                         | 2               | Y       | N              | AC    | 105                           |
|  | 1*1                        | 1                      | 1                            | N                                           | Y                         | 4               | Y       | Y              | AC    | 90                            |
|  | 1*1                        | 1                      | 1                            | N                                           | Y                         | 4               | Y       | Y              | AC    | 90                            |
|  | 1*1                        | 1                      | N                            | N                                           | N*2                       | 3               | Y       | N              | AC    | 80                            |
|  | 1*1                        | N                      | N                            | N                                           | N                         | 2               | Y       | N              | AC    | 80                            |
|  | 1                          | D15                    | D15                          | D15                                         | N                         | 3               | Y       | N              | AC    | 28                            |
|  | 1*1                        | 1*3                    | 1*3                          | N                                           | Y                         | 3               | Y       | Y              | AC/DC | AC:43<br>DC:40                |
|  | 1*1                        | 1*3                    | 1*3                          | N                                           | Y                         | 3               | Y       | Y              | AC/DC | AC:43<br>DC:40                |
|  | 1*1                        | N                      | N                            | N                                           | N                         | 1               | Y       | N              | AC    | 39                            |
|  | N                          | 1*3                    | 1*3                          | N                                           | Y                         | 2               | Y       | N              | AC/DC | AC:40<br>DC:40                |
|  | 2*1                        | 1                      | 1                            | N                                           | N*2                       | 3               | Y       | N              | AC    | 165                           |
|  | 1*1                        | 1                      | 1                            | N                                           | Y                         | 4               | Y       | Y              | AC    | 100                           |
|  |                            |                        |                              |                                             |                           |                 |         |                |       |                               |
|  | N                          | N                      | N                            | N                                           | Y                         | 2               | Y       | Y              | AC    | 30                            |
|  | N                          | N                      | N                            | N                                           | Y                         | 2               | Y       | N              | AC    | 30                            |
|  | N                          | N                      | N                            | N                                           | Y                         | 2               | Y       | Y              | AC    | 28                            |
|  | N                          | N                      | N                            | N                                           | Y                         | 2               | Y       | N              | AC    | 28                            |
|  | N                          | N                      | N                            | N                                           | Y                         | N               | N       | N              | AC    | 59                            |

The NTSC<sup>4.43</sup> system refers to an NTSC colour system in which the subcarrier frequency is modified to 4.43 MHz.

\*1 The Y/C IN has priority over the VIDEO IN.

\*2 External sync for RGB input is available.

\*3 Y/R-Y/B-Y and analogue RGB are switch selectable.

\*4 The PVM-4B1E is an assembly of four 4-inch monitors.

Monitor Successor Chart

BVM Series

|                           | Previous   | Current | BVM-20E1E20E1A<br>Resolution 1080 TV lines<br>without ACS | BVM-20F1E20F1A<br>Resolution 900 TV lines | BVM-20G1E20G1A<br>Resolution 800 TV lines |
|---------------------------|------------|---------|-----------------------------------------------------------|-------------------------------------------|-------------------------------------------|
| 20-inch BC Colour Monitor | BVM-2012P  |         |                                                           |                                           |                                           |
|                           | BVM-2011P  |         |                                                           |                                           |                                           |
|                           | BVM-2010P  |         |                                                           |                                           |                                           |
|                           | BVM-2016P  |         |                                                           |                                           |                                           |
|                           | BVM-2015P  |         |                                                           |                                           |                                           |
| 14-inch BC Colour Monitor | BVM-1411P  |         |                                                           |                                           |                                           |
|                           | BVM-1410P  |         |                                                           |                                           |                                           |
|                           | BVM-1416P  |         |                                                           |                                           |                                           |
|                           | BVM-1415P  |         |                                                           |                                           |                                           |
|                           | BVM-1454D  |         |                                                           |                                           |                                           |
| 9-inch BC Colour Monitor  | BVM-9021ME |         |                                                           |                                           |                                           |
|                           | BVM-9044D  |         |                                                           |                                           |                                           |

PVM Series

|                              | Previous   | Current | PVM-2950QM<br>29.5-inch | PVM-20ME20MAA<br>Resolution 900 TV lines | BVM-20G1E20G1A<br>Resolution 800 TV lines |
|------------------------------|------------|---------|-------------------------|------------------------------------------|-------------------------------------------|
| 27-inch Presentation Monitor | PVM-2730QM |         |                         |                                          |                                           |
| 21-inch Presentation Monitor | PVM-2130QM |         |                         |                                          |                                           |
| 20-inch Colour Monitor       | PVM-2054QM |         |                         |                                          |                                           |
|                              | PVM-2044QM |         |                         |                                          |                                           |
|                              | PVM-2042QM |         |                         |                                          |                                           |
| 14-inch Colour Monitor       | PVM-1454QM |         |                         |                                          |                                           |
|                              | PVM-1444QM |         |                         |                                          |                                           |
|                              | PVM-1442QM |         |                         |                                          |                                           |
|                              | PVM-1450QM |         |                         |                                          |                                           |
|                              | PVM-1440QM |         |                         |                                          |                                           |
|                              | KX-14CP1   |         |                         |                                          |                                           |
| 13-inch Colour Monitor       | PVM-1320P  |         |                         |                                          |                                           |
| 9-inch Colour Monitor        | PVM-9221ME |         |                         |                                          |                                           |
|                              | PVM-9220ME |         |                         |                                          |                                           |
|                              | PVM-9020ME |         |                         |                                          |                                           |
|                              | PVM-9044QM |         |                         |                                          |                                           |
|                              | PVM-9041QM |         |                         |                                          |                                           |
| 6-inch Colour Monitor        | PVM-6030ME |         |                         |                                          |                                           |
| 6-inch x 3 Colour Monitor    | PVM-6310   |         |                         |                                          |                                           |

B/W Monitors

|                                  | Previous  | Current | PVM-146E | PVM-146E<br>With DSS CRT | PVM-95E |
|----------------------------------|-----------|---------|----------|--------------------------|---------|
| 12-inch Black & White Monitor    | PVM-122CE |         |          |                          |         |
| 9-inch Black & White Monitor     | PVM-91CE  |         |          |                          |         |
| 4-inch x 4 Black & White Monitor | PVM-411CE |         |          |                          |         |

A 10x10 grid with a diagonal line of shaded cells. The shaded cells are located at positions (row, column): (1,2), (2,3), (3,4), (4,5), (5,6), (6,7), (7,8), (8,9), (9,10), and (10,10). The shading pattern is as follows: (1,2) is dark gray, (2,3) is dark gray, (3,4) is light gray, (4,5) is light gray, (5,6) is medium gray, (6,7) is medium gray, (7,8) is light gray, (8,9) is medium gray, (9,10) is medium gray, and (10,10) is dark gray.

|   |   |   |
|---|---|---|
|   | 0 | 1 |
| 0 |   |   |
| 1 |   |   |
| 2 |   |   |

|                  |
|------------------|
| Direct Successor |
| Suitable Models  |

# PROJECTOR

**VPH-G90E/G90M**\*1 (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>) *VPH Series*



- Multiscan capability: horizontal 15 kHz to 150 kHz, vertical 35 Hz to 150 Hz
- Incorporates new, high resolution 9-inch electromagnetic focus CRTs
- Incorporates a Universal Optical Coupling
- Remarkable light output of 350 ANSI lm (150 kHz: 50 Hz, 6500 K), 1300 lm (peak white), 500 lm (all white)
- High resolution of 700 TV lines (video)/1100 TV lines (HDTV\*<sup>2</sup>)/2500 x 2000 pixels (RGB, measured at fH: 102 kHz, fV: 50 Hz)
- Wide RGB bandwidth of 135 MHz
- Wider range of registration adjustments for accurate registration
- HACC lens for superior and stable picture performance
- Video decoder circuit for enhanced video picture quality\*<sup>3</sup>
- Sony Digital Reality Creation™
- Responds to both analogue/digital RGB signals
- Supplied wired/wireless remote commander RM-PJ1001 controls all the projector functions such as set-up adjustments and operational functions
- Various optional accessories available for system versatility
- Desk top mounted projection, ceiling mounted projection, floor mounted projection and rear projection capabilities
- Can be used with screens from 90 to 300 inches in size with simple adjustments

\*1 Not available in some areas. For details, please contact your nearest Sony office.

\*2 HDTV: 1125/60/2:1 and 1125/59.94/2:1 (SMPTE-240M/274M) HDTV systems.

\*3 Applicable for VPH-G90M only.



VPH-G90E



VPH-G90M

|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| Mass:              | Approx. 110 kg (242 lb 8 oz)                                       |
| Power consumption: | 1000 W, Standby 14 W,<br>Power saving mode 600 W                   |
| Dimensions:        | 750 (W) x 385.5 (H) x 1066 (D) mm<br>(29 5/8 x 15 1/4 x 42 inches) |

## VPH-G70QM/G70MG\*1 (PAL/NTSC/SECAM/NTSC<sup>4,43</sup>) *VPH Series*



- Multiscan capability: horizontal 15 kHz to 110 kHz, vertical 38 Hz to 150 Hz
- Incorporates newly developed 8-inch electromagnetic focus CRTs
- Incorporates a universal optical coupling
- Remarkable light output of 240 ANSI lumens (fH: 110 kHz, fV: 60 Hz, 6500 K)/ 200 ANSI lumens (fH: 15 kHz, fV: 60 Hz), Peak white: 1200 lm
- High resolution of 700 TV lines (video)/1100 TV lines (HDTV<sup>\*2</sup>)/1700 x 1200 pixels (RGB in at fH: 74 kHz, fV: 60 Hz)
- Wide RGB bandwidth of 120 MHz
- HACC lens for superb, stable picture performance
- Precise registration with the Key/Pin balance mode and 25-point zone adjustment
- Input memory and Video memory available for facilitated set-up
- Independent brightness and colour uniformity adjustments
- Incorporates the Picture orbiting function
- Simplified operation for multi-projection applications such as ABL link and Index operation functions
- Optional internal line-doubler board available
- Video decoder circuit for enhanced video picture quality
- Various optional accessories available for system versatility
- Desk top mounted projection, ceiling mounted projection, floor mounted projection and rear projection capabilities
- Can be used with screens from 60 to 300 inches in size with simple adjustments

\*1 Not available in some areas. For details, please contact your nearest Sony office.

\*2 HDTV: 1125/60 interlaced HDTV studio standard system.



VPH-G70QM



VPH-G70QMG

|                    |                                                                                                                                              |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Mass:              | Approx. 83 kg (183 lb)                                                                                                                       |
| Power consumption: | 720 W, Standby 7 W                                                                                                                           |
| Dimensions:        | 695 (W) x 358 (H) x 948 (D) mm<br>(27 <sup>3</sup> / <sub>8</sub> x 14 <sup>1</sup> / <sub>8</sub> x 37 <sup>5</sup> / <sub>16</sub> inches) |

## MULTISCAN PROJECTOR

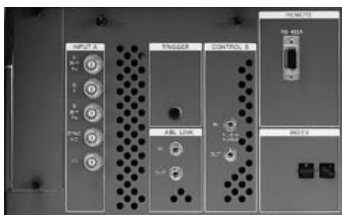
# VPH-G70VRM\*1 (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>/PAL-M) *VPH Series*



- Designed specifically for use in Virtual Reality and Simulation applications
- Deep focussing area, high resolution lenses, and extended geometry for use with curved and dome-style screens
- Multiscan capability: horizontal 15 kHz to 110 kHz, vertical 38 Hz to 150 Hz
- Accepts composite and S Video signals when an appropriate optional interface board is installed
- Incorporates newly developed 8-inch electromagnetic focus CRTs
- Incorporates a universal optical coupling
- High resolution of 700 TV lines (video)/1100 TV lines (HDTV\*<sup>2</sup>)/1700 x 1200 pixels (RGB measured at fH: 74 kHz, fV: 60 Hz)
- Wide RGB bandwidth of 120 MHz
- HACC lens for superb, stable picture performance
- Precise registration with the Key/Pin balance mode and 25-point zone adjustment
- Input memory and Video memory available for facilitated set-up
- Independent brightness and colour uniformity adjustments
- Incorporates the Picture orbiting function
- Simplified operation for multi-projection applications such as ABL link and Index operation functions
- Optional internal line-doubler board available
- Video decoder circuit for enhanced video picture quality
- Various optional accessories available for system versatility
- Can be used with screens from 60 to 300 inches in size with simple adjustments
- Black cabinet suitable for Virtual Reality and Simulation installations

\*1 Not available in some areas.  
For details, please contact your nearest Sony office.

\*2 HDTV: 1125/60 interlaced HDTV studio standard system.



Mass: Approx. 83 kg (183 lb)  
Power consumption: 720 W, Standby 7 W  
Dimensions: 695 (W) x 358 (H) x 948 (D) mm  
(27 <sup>3</sup>/<sub>8</sub> x 14 <sup>1</sup>/<sub>8</sub> x 37 <sup>5</sup>/<sub>16</sub> inches)

## VPH-D50QM\*1 (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>) *VPH Series*



- Multiscan capability: horizontal 15 kHz to 64 kHz, vertical 38 Hz to 150 Hz
- Incorporates newly developed 7-inch static focus CRTs
- Incorporates a universal air coupling
- Remarkable light output of 160 ANSI lumens (fH: 64 kHz, fV: 50 Hz, 6500 K)/130 ANSI lumens (fH: 15 kHz, fV: 60 Hz), Peak white: 800 lm
- High resolution of 700 TV lines (video)/1000 TV lines (HDTV\*<sup>2</sup>)/1280 x 1024 pixels (RGB in at fH:64 kHz, fV:60 Hz)
- Wide RGB bandwidth of 75 MHz
- Precise registration with the Key/Pin balance mode
- Input memory and Video memory available for facilitated set-up
- Video decoder circuit for enhanced video picture quality
- Incorporates the Picture orbiting function
- Simplified operation for multi-projection applications such as ABL link and Index operation functions
- Optional internal line-doubler board available
- Various optional accessories available for system versatility
- Desk top mounted projection, ceiling mounted projection, floor mounted projection and rear projection capabilities
- Can be used with screens from 60 to 250 inches in size with simple adjustments

\*1 Not available in some areas. For details, please contact your nearest Sony office.

\*2 HDTV: 1125/60 interlaced HDTV studio standard system.



|                    |                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Mass:              | Approx. 54 kg (119 lb 1 oz)                                                                                                                 |
| Power consumption: | 450 W, Standby 7 W                                                                                                                          |
| Dimensions:        | 603 (W) x 345 (H) x 671 (D) mm<br>(23 <sup>3</sup> / <sub>4</sub> x 13 <sup>5</sup> / <sub>8</sub> x 26 <sup>1</sup> / <sub>2</sub> inches) |

## MULTISCAN PROJECTOR

### VPH-D50HTM (PAL/NTSC/SECAM/ NTSC<sub>4.43</sub>/PAL-M)

*VPH Series*



- Designed specifically for the home theatre market
- Multiscan capability: horizontal 15 kHz to 64 kHz, vertical 38 Hz to 150 Hz
- Incorporates newly developed 7-inch static focus CRTs
- Incorporates a universal air coupling
- Remarkable light output of 160 ANSI lumens (fH: 64 kHz, fV: 50 Hz, 6500 K)/130 ANSI lumens (fH: 15 kHz, fV: 60 Hz), Peak white: 800 lm
- High resolution of 700 TV lines (video)/1000 TV lines (HDTV\*)/1280 x 1024 pixels (RGB in at fH: 64 kHz, fV: 60 Hz)
- Wide RGB bandwidth of 75 MHz
- Precise registration with the Key/Pin balance mode
- Input memory and Video memory available for facilitated set-up
- Video decoder circuit for enhanced video picture quality
- Incorporates the Picture orbiting function
- Simplified operation for multi-projection applications such as ABL link and Index operation functions
- Internal line-doubler board included as a standard feature
- Various optional accessories available for system versatility
- Table-top projection, ceiling mounted projection, floor mounted projection and rear projection capabilities
- Can be used with screens from 60 to 250 inches in size with simple adjustments

\* HDTV: 1125/60/2:1 and 1125/59.94/2:1 (SMPTE-240M/274M) HDTV systems.



|                    |                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Mass:              | Approx. 54 kg (119 lb 1 oz)                                                                                                                 |
| Power consumption: | 450 W, Standby 7 W                                                                                                                          |
| Dimensions:        | 603 (W) x 345 (H) x 671 (D) mm<br>(23 <sup>3</sup> / <sub>4</sub> x 13 <sup>5</sup> / <sub>8</sub> x 26 <sup>1</sup> / <sub>2</sub> inches) |

## RVP-511DMS (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>) *RVP Series*



- 50-inch projection wall unit for various projection wall applications
- Lightweight (88 kg) and a short cabinet depth (1236 mm) for easier handling and stacking
- Input capability: double scan video signals and computer signals which conform to VGA mode 3 (31.469 kHz/59.94 Hz) standard
- Optional PWB-411D video input board available for composite, Y/C, component and 15 kHz RGB video signals
- Double scan capability for flicker free signal reproduction when using with the optional PWB-411D video input board
- Adopts optical coupling CRT for high contrast image display
- Colour temperature selection: 3200 K/6500 K/9300 K/User preset (factory preset: 6500 K)
- Two-part construction enables the CRT assembly, together with the electronic chassis, to be easily separated from the cabinet
- Wide viewing angle
- Optional VPS-515RF/511RF screens with ultra-thin screen surround are available
- Optional CHP-411DM projection wall chassis available for system versatility
- Optional wired/wireless remote control unit RM-PJ1292\* with address function for all projector control functions, including inputs selection, picture control, RGB size and shift and centering controls

\* RM-PJ1292 is included in the system control kit PWK-411D.



|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| Mass:              | 88 kg (194 lb)                                                                    |
| Power Consumption: | 300 W                                                                             |
| Dimensions (max.): | 1018 (W) x 781 (H) x 1236 (D) mm<br>(40 1/8 (W) x 30 3/4 (H) x 48 3/4 (D) inches) |

# RVP-411DMS (PAL/NTSC/SECAM/NTSC4.43) *RVP series*



- 41-inch projection wall unit for various projection wall applications
- Lightweight (75 kg) and a short cabinet depth (1044 mm) for easier handling and stacking
- Input capability: double scan video signals and computer signals which conform to VGA mode 3 (31.469 kHz/59.94 Hz) standard
- Optional PWB-411D video input board available for composite, Y/C, component and 15 kHz RGB video signals
- Double scan capability for flicker free signal reproduction when using with the optional PWB-411D video input board
- Adopts optical coupling CRT for high contrast image display
- Colour temperature selection: 3200 K/6500 K/9300 K/User preset (factory preset: 6500 K)
- Two-part construction enables the CRT assembly, together with the electronic chassis, to be easily separated from the cabinet
- Wide viewing angle
- Optional VPS-415RF/411RF screens with ultra-thin screen surround are available
- Optional CHP-411DM projection wall chassis available for system versatility
- Optional wired/wireless remote control unit RM-PJ1292\* with address function for all projector control functions, including inputs selection, picture control, RGB size and shift and centering controls

\* RM-PJ1292 is included in the system control kit PWK-411D.



Mass: 75 kg (165 lb 6 oz)  
Power Consumption: 200 to 240 V, 1.4 A, 300 W  
Dimensions (max.) : 830 (W) x 641 (H) x 1044 (D) mm  
(32 3/4 (W) x 25 1/4 (H) x 41 1/8 (D) inches)

## VPH-V22M\* (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>) *VPH Series*



- Light output of 100 ANSI lumens (fH: 15.75 kHz, fV: 60 Hz, 6500 K), Peak white: 700 lm, All white: 140 lm
- Adopts high quality performance HACC lens
- Accepts component (Y/R-Y/B-Y), RGB, Y/C and composite video signals
- A high resolution of 700 TV lines (composite video) /1000 TV lines(RGB)
- Supplied wireless/wired remote control unit RM-PJV20 controls all the projector functions such as set-up adjustments and operational functions
- Desk top mounted projection, ceiling mounted projection, floor mounted projection and rear projection capabilities
- Can be used with a screen from 70 to 250 inches in size with a simple adjustment

\* Not available in some areas. For details, please contact your nearest Sony office.



|                    |                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------|
| Mass:              | 38 kg (83 lb 12 oz)                                                                                             |
| Power consumption: | 210 W                                                                                                           |
| Dimensions:        | 532 (W) x 288 (H) x 597 (D) mm<br>(21 x 11 <sup>3</sup> / <sub>8</sub> x 23 <sup>5</sup> / <sub>8</sub> inches) |

## VIDEO PROJECTOR

### VPH-V20M\* (PAL/NTSC/SECAM/NTSC<sub>4.43</sub>) *VPH Series*



- Light output of 100 ANSI lumens (fH: 15.75 kHz, fV: 60 Hz, 6500 K), Peak white: 700 lm, All white: 140 lm
- Accepts component (Y/R-Y/B-Y or RGB), Y/C and composite video signals
- A high resolution of 700 TV lines (composite video) / 1000 TV lines (RGB)
- Supplied wireless/wired remote control unit RM-PJV20 controls all the projector functions such as set-up adjustments and operational functions
- Desk top mounted projection, ceiling mounted projection, floor mounted projection and rear projection capabilities
- Can be used with a screen from 70 to 250 inches in size with a simple adjustment

\* Not available in some areas. For details, please contact your nearest Sony office.



|                    |                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------|
| Mass:              | 30 kg (66 lb 2 oz)                                                                                              |
| Power consumption: | 210 W                                                                                                           |
| Dimensions:        | 532 (W) x 288 (H) x 597 (D) mm<br>(21 x 11 <sup>3</sup> / <sub>8</sub> x 23 <sup>5</sup> / <sub>8</sub> inches) |

## VPL-FE100E/FE100M (PAL/NTSC/SECAM/NTSC4.43/PAL-M) *VPL Series*



- SXGA resolution LCD (Liquid Crystal Display)-based data projector
- Three 1.8-inch LCD panels for a total of 3,932,160 pixels (1,310,720 pixels x 3)
- Four 120 W UHP lamps
- Outstanding light output of 3500 ANSI lumens
- Excellent uniformity assured with 3D Digital gamma correction
- Exclusive Sony DRC (Digital Reality Creation) generates video pictures with effectively four times the resolution of that from a conventional video signal
- Accepts VGA, SVGA, XGA, SXGA and UXGA\*<sup>1</sup> with a horizontal frequency of 15 to 94 kHz, composite video\*<sup>2</sup>, Y/C video\*<sup>2</sup>, component video, RGB video and HDTV signals
- Power zoom, power focus and picture shift functions for installation flexibility
- 5:4 and 4:3 aspect ratios supported
- Seven-language on-screen display
- Supplied remote commander RM-PJ1001 controls all the projector functions
- Seven optional lenses available
- Can be used with screens from 40 to 500 inches in size
- Power saving mode available

\*1 Compressed UXGA signal is reproduced while preserving the detail of the image.

\*2 VPL-FE100E requires optional IFB-X2000E interface board to accept these signals.



VPL-FE100E



VPL-FE100M

|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| Mass:              | Approx. 34.5 kg (75 lb 14 oz)                                      |
| Power consumption: | Max. 770 W (approx.), Standby 20 W                                 |
| Dimensions:        | 562 (W) x 237 (H) x 649 (D) mm<br>(22 1/4 x 9 3/8 x 25 5/8 inches) |

LCD PROJECTOR

VPL-FX200E/FX200M (PAL/NTSC/SECAM/NTSC4.43/PAL-M) VPL Series



- XGA resolution LCD (Liquid Crystal Display)-based data projector
- Three 1.8-inch LCD panels for a total of 2,359,296 pixels (786,432 pixels x 3)
- Four 120 W UHP lamps
- Outstanding light output of 3100 ANSI lumens
- Excellent uniformity assured with 3D Digital gamma correction
- Exclusive Sony DRC (Digital Reality Creation) generates video pictures with effectively four times the resolution of that from a conventional video signal
- Accepts VGA, SVGA, XGA, SXGA\*1 and UXGA\*1 with a horizontal frequency of 15 to 94 kHz, composite video\*2, Y/C video\*2, component video, RGB video and HDTV\*3 signals
- Power zoom, power focus and picture shift functions for installation flexibility
- Seven-language on-screen menu
- Supplied remote commander RM-PJ1001 controls all the projector functions
- Six optional lenses available
- Can be used with screens from 40 to 500 inches in size
- Power saving mode available

\*1 Compressed SXGA and UXGA signals are reproduced while preserving the detail of the image.

\*2 VPL-FX200E requires optional IFB-X2000E interface board to accept these signals.

\*3 HDTV: 1125/60/2:1 and 1125/59.94/2:1 (SMPTE-240M/274M) HDTV systems.



VPL-FX200E



VPL-FX200M

|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| Mass:              | Approx. 34.5 kg (75 lb 14 oz)                                      |
| Power consumption: | Max. 770 W (approx.), Standby 20 W                                 |
| Dimensions:        | 562 (W) x 237 (H) x 649 (D) mm<br>(22 1/4 x 9 3/8 x 25 5/8 inches) |

## VPL-PX30 (PAL/NTSC/SECAM/NTSC4.43/ PAL-M/PAL-N)

*VPL Series*



- XGA resolution LCD (Liquid Crystal Display)-based portable presentation projector
- Three 1.3-inch LCD panels for a total of 2,359,296 pixels (786,432 pixels x 3)
- 200 W UHP lamp (LOW power mode selectable: 150 W)
- Light output of 2400 ANSI lumens
- Advanced technologies including 3D Gamma Correction, RGB Enhancer and Digital Keystone for outstanding picture quality
- Accepts VGA, SVGA, XGA and SXGA\*<sup>1</sup> with a horizontal frequency of 15 to 91 kHz, composite video, Y/C video, component video and DTV\*<sup>2</sup> signals
- Wide range of input terminals (5 BNC, Monitor out, RS-232C, Digital RGB DFP 20-pin)
- USB hub function with PROJECTOR STATION software, Advanced APA (Auto Pixel Alignment) and Digital Zoom for enhanced presentations
- Seven-language on-screen display
- Lightweight, compact body
- Remote commander with laser pointer and mouse control
- Desktop, ceiling and rear projection capabilities
- Can be used with screens from 40 to 300 inches in size
- Built-in three-speaker stereo

\*<sup>1</sup> Compressed SXGA signal is reproduced while maintaining the 5:4 aspect ratio.

\*<sup>2</sup> The VPL-PX30 supports 480/60P, 575/50P, 1080/50I, 720/60P and 720/50P DTV signals.



|                    |                                                                                                                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Mass:              | Approx. 7.2 kg (15 lb 14 oz)                                                                                                               |
| Power consumption: | Max. 290 W, Standby 5 W, Power saving mode 50 W                                                                                            |
| Dimensions:        | 339 (W) x 142 (H) x 335 (D) mm<br>(13 <sup>3</sup> / <sub>8</sub> x 5 <sup>5</sup> / <sub>8</sub> x 13 <sup>1</sup> / <sub>4</sub> inches) |

## LCD PROJECTOR

### VPL-PX20 (PAL/NTSC/SECAM/NTSC4.43/ PAL-M/PAL-N)

*VPL Series*



- XGA resolution LCD (Liquid Crystal Display)-based portable presentation projector
- Three 1.3-inch LCD panels for a total of 2,359,296 pixels (786,432 pixels x 3)
- 200 W UHP lamp (LOW power mode selectable: 150 W)
- Light output of 1400 ANSI lumens
- Advanced technologies including 3D Gamma Correction, RGB Enhancer and Digital Keystone for outstanding picture quality
- Handles VGA, SVGA, XGA and SXGA\*<sup>1</sup> with a horizontal frequency of 15 to 91 kHz, composite video, Y/C video, component video and DTV\*<sup>2</sup> signals
- Wide range of input terminals (5 BNC, Monitor out, RS-232C, Digital RGB DFP 20-pin)
- USB hub function with PROJECTOR STATION software, Advanced APA (Auto Pixel Alignment) and Digital Zoom for enhanced presentations
- Lightweight, compact body
- Seven-language on-screen display
- Remote commander with laser pointer and mouse control
- Desktop, ceiling and rear projection capabilities
- Can be used with screens from 40 to 300 inches in size
- Built-in three-speaker stereo

\*<sup>1</sup> Compressed SXGA signal is reproduced while maintaining the 5:4 aspect ratio.

\*<sup>2</sup> The VPL-PX20 supports 480/60P, 575/50P, 1080/50I, 720/60P and 720/50P DTV signals.



|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| Mass:              | Approx. 7.2 kg (15 lb 14 oz)                                       |
| Power consumption: | Max. 290 W, Standby 5 W, Power saving mode 50 W                    |
| Dimensions:        | 339 (W) x 142 (H) x 335 (D) mm<br>(13 3/8 x 5 5/8 x 13 1/4 inches) |

## VPL-S900E/S900M (PAL/NTSC/SECAM/NTSC4.43/PAL-M) VPL Series



- LCD (Liquid Crystal Display)-based portable presentation projector
- Three dual actuated 1.3-inch p-Si TFT LCD for true SVGA resolution of 1,440,000 pixels (480,000 pixels x 3)
- Output of 1100 ANSI lumens achieved through the use of metal mask on the LCD panels, high brightness projection lenses and a 120 W UHP lamp
- Excellent uniformity and accurate colour reproduction with advanced technologies including fly eye light integrators and bilinear interpolation method of Advanced Scan Conversion (ASC)
- Accepts VGA, SVGA, XGA\*<sup>1</sup> and SXGA\*<sup>1</sup> resolution with horizontal frequencies of 15 to 91 kHz as well as composite video, Y/C video and component video signals\*<sup>2</sup>
- Simple set-up using 38 preset data and unique APA (Auto Pixel Alignment) function
- Input B or Monitor out function easily switchable
- Slim, contoured magnesium diecast body
- Seven-language on-screen display
- Grip-contoured remote commander RM-PJM600 with laser pointer and mouse control function
- Desktop or ceiling mounted, front or rear projection
- Optional lenses available to project optimum images on screens from 40 to 300 inches in size
- Built-in three-speaker stereo

\*1 Compressed XGA and SXGA signals are reproduced while preserving the detail of the image.

\*2 VPL-S900E requires optional IFB-X600E interface board to accept any video signals.



VPL-S900E



VPL-S900M

|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| Mass:              | Approx. 5.9 kg (13 lb)                                             |
| Power consumption: | Max. 220 W (approx.), Standby 2 W                                  |
| Dimensions:        | 339 (W) x 136 (H) x 322 (D) mm<br>(13 3/8 x 5 3/8 x 12 3/4 inches) |

### VPL-PX1 (PAL/NTSC/SECAM/ NTSC<sub>4.43</sub>/PAL-M)

VPL Series



- XGA resolution LCD (Liquid Crystal Display)-based data projector
- Three 0.9-inch LCD panels for a total of 2,359,296 pixels (786,432 pixels x 3)
- 120 W UHP lamp
- Light output of 1000 ANSI lumens
- Excellent uniformity and accurate colour reproduction assured with advanced technologies
- Built-in zoom lens
- Accepts VGA, SVGA, XGA and SXGA\* with a horizontal frequency of 15 to 91 kHz
- Lightweight at approximately 4 kg
- Seven-language on-screen menu
- Supplied remote commander RM-PJM600 controls all the projector functions
- Mouse function operation for remote control of the connected computer source
- Can be used with screens from 40 to 200 inches in size
- Built-in stereo speakers

\* Compressed SXGA signal is reproduced while preserving the detail of the image.



|                    |                                                                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Mass:              | Apprax. 4 kg (8 lb 13 oz)                                                                                                                 |
| Power consumption: | max. 190 W, Standby 5 W                                                                                                                   |
| Dimensions:        | 108 (W) x 223 (H) x 337 (D) mm<br>(4 <sup>3</sup> / <sub>8</sub> x 8 <sup>7</sup> / <sub>8</sub> x 13 <sup>3</sup> / <sub>8</sub> inches) |

## VPL-CS1 (PAL/NTSC/SECAM/ NTSC4.43/PAL-M)

VPL Series



- SVGA resolution LCD (Liquid Crystal Display)-based data projector
- Three 0.7-inch LCD panels for a total of 1,440,000 pixels (480,000 pixels x 3)
- 120 W UHP lamp
- Light output of 600 ANSI lumens
- Excellent uniformity and accurate colour reproduction assured with advanced technologies
- Accepts VGA, SVGA, XGA\* and SXGA\* with a horizontal frequency of 15, 24 to 91 kHz, composite video, Y/C video, component video and RGB video signals
- Compact and lightweight at approximately 2.9 kg
- Seven-language on-screen display
- Supplied remote commander RM-PJM1 controls all the projector functions
- Mouse function operation for remote control of the connected computer source
- Built-in 1.3 times zoom lens
- Can be used with screens from 40 to 150 inches in size
- Built-in stereo speakers

\* Compressed XGA and SXGA signals are reproduced while preserving the detail of the image.



|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| Mass:              | Approx. 2.9 kg (6 lb 6 oz)                                   |
| Power consumption: | Max. 190 W, Standby 4.2 W                                    |
| Dimensions:        | 277 (W) x 70 (H) x 214 (D) mm<br>(11 x 2 7/8 x 8 1/2 inches) |

# VPL-VW10HT (PAL/NTSC/SECAM/ NTSC<sub>4.43</sub>/PAL-M)

VPL Series



- XGA resolution LCD (Liquid Crystal Display)-based projector designed for a home theatre
- Three 16:9 1.35-inch LCD panels for a total of 3,147,264 pixels (1,049,088 pixels x 3)
- 200 W UHP lamp
- Light output of 1000 ANSI lumens (In the “normal” mode, 16:9 aspect)
- Superb picture quality assured with Digital Reality Creation - Multi Function™, 3D gamma correction and 3D/3-line YC separation/DNR circuit
- Accepts VGA, SVGA, XGA and SXGA\*<sup>1</sup> with horizontal frequencies of 15 to 91 kHz, composite video, Y/C video, component video, RGB video and DTV\*<sup>2</sup> signals
- Cinema black mode
- Video memory
- Through mode for one-to-one mapped picture
- Low fan noise
- White cabinet
- Short throwing distance
- Supplied remote commander RM-PJW10 controls all the projector functions
- Can be used with screens from 40 to 300 inches

\*<sup>1</sup> Compressed SXGA is reproduced while preserving the detail of the image.

\*<sup>2</sup> 480i, 480P, 720P, 1080i



|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| Mass:              | Approx. 8 kg (17 lb 10 oz)                                         |
| Power consumption: | Max. 300 W, Standby 6 W                                            |
| Dimensions:        | 395 (W) x 168 (H) x 427 (D) mm<br>(15 5/8 x 6 5/8 x 16 7/8 inches) |

# VPD-LE100 (PAL/NTSC/SECAM/ NTSC4.43/PAL-M)



- Multiscan projector with Digital Light Processing™ (DLP™) technology
- Three SXGA Digital Micromirror Device™ (DMD™) for a total of 3,932,160 pixels (1,310,720 pixels x 3)
- Xenon lamp
- Outstanding light output of 10000 ANSI lumens
- Sony Digital Reality Creation as standard, while 2-3 pull down FILM mode\*1 can be selected
- Accepts VGA, SVGA, XGA, SXGA and UXGA\*2 with a horizontal frequency of 15 to 100 kHz, component video, RGB video and HDTV/DTV signals
- Optional IFB boards available including 4:2:2 SDI and HD SDI
- Power Zoom, Power Focus and horizontal/vertical Power Lens Shift functions for installation flexibility
- Seven-language on-screen display
- Four optional lenses available
- Can be used with screens from 70 to 700 inches in size

\*1 Applicable only to NTSC (525/60), NTSC4.43 and PAL-M signals.

\*2 Compressed UXGA signal is reproduced while preserving the detail of the image.



|                    |                                                                         |
|--------------------|-------------------------------------------------------------------------|
| Mass:              | Approx. 95 kg (209 lb)                                                  |
| Power consumption: | Max. approx. 2.8 kW, Standby approx. 40 W                               |
| Dimensions:        | 724 (W) x 347.5 (H) x 948.2 (D) mm<br>(28 5/8 x 13 3/4 x 37 3/8 inches) |

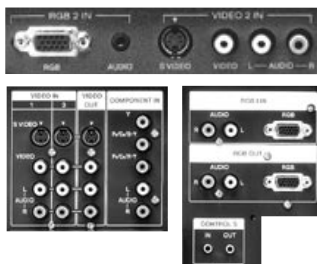
## LCD REAR PROJECTOR

### KL-X9200M\* (PAL/NTSC/SECAM/ NTSC<sub>4.43</sub>/PAL-M)



- Simplified system set-up and installation with Plug and Present technology
- Unique presentation technology creates endless user possibilities, including boardroom presentation, DVD theatre and video conferencing
- Three XGA (1024 x 768) resolution LCD panels
- New Linear Array Processor (LAP) scan conversion technology displays up to SXGA (1280 x 1024) resolutions
- All-in-one optical unit requires no field calibration or special set-up
- Accepts PAL/NTSC/SECAM/NTSC<sub>4.43</sub>/PAL-M video (automatically/ manually selected) and RGB signals
- Six-language on-screen display
- Scan range: horizontal 15, 75, 31.5 to 85 kHz, vertical 50 to 85 Hz
- Stereo speakers (L/R: 5 W x 2) and woofer (15 W)
- Bright 4:3 aspect 50-inch screen (viewable area, measured diagonally) with compact design
- Perfectly flat screen allows wide viewing angle: horizontal 130°, vertical 60°
- Colour temperature selection: 6500 K/8000 K/9300 K (factory preset: 9300 K)
- Supplied remote control unit RM-902 for picture and audio control functions

\* Not available in some areas.  
For details, please contact  
your nearest Sony office.



|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| Mass:              | Approx. 45 kg (98 lb 50 oz)                                        |
| Power consumption: | Max. 220 W, Standby 4 W                                            |
| Dimensions:        | 1130 (W) x 1090 (H) x 610 (D) mm<br>(44 1/2 x 42 1/10 x 24 inches) |



## Projector Accessories

|                         |            | VPH-G90E/G90M | VPH-G700M/G700MG | VPH-G70VRM | VPH-D50QM | VPH-D50HTM | RVP-511DMS | RVP-411DMS |
|-------------------------|------------|---------------|------------------|------------|-----------|------------|------------|------------|
| Replacement Lamps       | LMP-600    | —             | —                | —          | —         | —          | —          |            |
|                         | LMP-C120   | —             | —                | —          | —         | —          | —          |            |
|                         | LMP-P120   | —             | —                | —          | —         | —          | —          |            |
|                         | LMP-P200   | —             | —                | —          | —         | —          | —          |            |
|                         | LMP-Q120   | —             | —                | —          | —         | —          | —          |            |
|                         | LMP-S120   | —             | —                | —          | —         | —          | —          |            |
|                         | LMP-L2000  | —             | —                | —          | —         | —          | —          |            |
| Suspension Supports     | PSS-10     | 0*1           | 0*1              | 0*1        | 0*1       | 0*1        | —          | —          |
|                         | PSS-70     | —             | 0                | 0          | 0         | 0          | —          | —          |
|                         | PSS-90     | 0             | —                | —          | —         | —          | —          | —          |
|                         | PSS-600    | —             | —                | —          | —         | —          | —          | —          |
|                         | PSS-610    | —             | —                | —          | —         | —          | —          | —          |
|                         | PSS-722    | —             | —                | —          | —         | —          | —          | —          |
|                         | PSS-2000   | —             | —                | —          | —         | —          | —          | —          |
|                         | SU-PJ2000  | —             | —                | —          | —         | —          | —          | —          |
| Remote Controllers      | RM-PJ10    | 0             | 0                | 0          | 0         | 0          | 0          | 0          |
|                         | RM-PJD50   | 0             | —                | —          | —         | S*2        | —          | —          |
|                         | RM-PJ1001  | S             | 0                | 0          | 0         | S          | —          | —          |
|                         | RM-PJ3000S | 0             | 0                | 0          | 0         | 0          | —          | —          |
|                         | RM-PJM610  | —             | —                | —          | —         | —          | —          | —          |
| Carrying Cases          | VLC-SC50   | —             | —                | —          | —         | —          | —          | —          |
|                         | VLC-600    | —             | —                | —          | —         | —          | —          | —          |
| Replacement Chassis     | CHP-411DM  | —             | —                | —          | —         | —          | 0          | 0          |
| Control Kit             | PWK-411D   | —             | —                | —          | —         | —          | 0          | 0          |
| Projection Wall Screens | VPS-515RF  | —             | —                | —          | —         | —          | 0          | —          |
|                         | VPS-415RF  | —             | —                | —          | —         | —          | —          | 0          |
|                         | VPS-511RF  | —             | —                | —          | —         | —          | 0          | —          |
|                         | VPS-411RF  | —             | —                | —          | —         | —          | —          | 0          |
| Base Stands             | PWR-B511A  | —             | —                | —          | —         | —          | 0          | —          |
|                         | PWR-B411A  | —             | —                | —          | —         | —          | —          | 0          |
| Position Beams          | PWR-P512A  | —             | —                | —          | —         | —          | 0          | —          |
|                         | PWR-P513A  | —             | —                | —          | —         | —          | 0          | —          |
|                         | PWR-P412A  | —             | —                | —          | —         | —          | —          | 0          |
|                         | PWR-P413A  | —             | —                | —          | —         | —          | —          | 0          |

\*1 For the installation from the ceiling (height adjustable):  
utilized with suspension supports exclusive for each models.

\*2 Supplied with VPH-D50HTM only.

|  | VPH-V22M | VPH-V20M | VPL-FE100E/FE100M | VPL-FX200E/FX200M | VPL-PX30 | VPL-PX20 | VPL-S900E/S900M | VPL-PX1 | VPL-CS1 | VPL-VW10HT | VPD-LE100 |            |
|--|----------|----------|-------------------|-------------------|----------|----------|-----------------|---------|---------|------------|-----------|------------|
|  | —        | —        | —                 | —                 | —        | 0        | —               | —       | —       | —          |           | LMP-600    |
|  | —        | —        | —                 | —                 | —        | —        | —               | 0       | —       | —          |           | LMP-C120   |
|  | —        | —        | —                 | —                 | —        | —        | 0               | —       | —       | —          |           | LMP-P120   |
|  | —        | —        | —                 | —                 | 0        | 0        | —               | —       | —       | 0          | —         | LMP-P200   |
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | —          | —         | LMP-Q120   |
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | —          | —         | LMP-S120   |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | 0         | LMP-L2000  |
|  | 0*1      | 0*1      | 0*1               | 0*1               | —        | —        | —               | —       | —       | —          | —         | PSS-10     |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PSS-70     |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PSS-90     |
|  | —        | —        | —                 | —                 | —        | —        | 0               | —       | —       | —          | —         | PSS-600    |
|  | —        | —        | —                 | —                 | 0        | 0        | —               | —       | —       | 0          | —         | PSS-610    |
|  | 0        | 0        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PSS-722    |
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | —          | —         | PSS-2000   |
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | —          | —         | SU-PJ2000  |
|  | 0        | 0        | 0                 | 0                 | —        | —        | 0               | —       | —       | —          | 0         | RM-PJ10    |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | RM-PJD50   |
|  | —        | —        | S                 | S                 | —        | —        | —               | —       | —       | —          | S         | RM-PJ1001  |
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | —          | 0         | RM-PJ3000S |
|  | —        | —        | —                 | —                 | S        | S        | 0               | 0       | 0       | —          | —         | RM-PJM610  |
|  | —        | —        | —                 | —                 | —        | —        | —               | 0       | —       | —          | —         | VLC-SC50   |
|  | —        | —        | —                 | —                 | 0        | 0        | 0               | —       | —       | —          | —         | VLC-600    |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | CHP-411DM  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PWK-411D   |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | VPS-515RF  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | VPS-415RF  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | VPS-511RF  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | VPS-411RF  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PWR-B511A  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PWR-B411A  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PWR-P512A  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PWR-P513A  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PWR-P412A  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | PWR-P413A  |

0 = Optional  
S = Supplied  
— = Not Applicable

## Peripheral Accessories

|            |                                                | VPH-G90E/G90M | VPH-G70QM/G70QMG | VPH-G70VRM | VPH-D50QM | VPH-D50HTM | RVP-511DMS | RVP-411DMS |
|------------|------------------------------------------------|---------------|------------------|------------|-----------|------------|------------|------------|
| PC-3000    | Signal Interface Switcher                      | 0             | —                | —          | —         | —          | —          |            |
| IFU-1271M  | Interface Unit                                 | 0             | 0                | 0          | 0         | 0          | —          | —          |
| IFU-SC50   | Interface Unit                                 | —             | —                | —          | —         | —          | —          | —          |
| IFB-12A*1  | 5 BNC Input/Output                             | 0             | 0                | 0          | 0         | —          | —          | —          |
| IFB-21     | Analogue RGB Input/Output<br>(HD D-sub 15-pin) | 0             | 0                | 0          | 0         | —          | —          | —          |
| IFB-40     | 14-pin Multi-connector Input/Output            | 0             | 0                | 0          | 0         | —          | —          | —          |
| IFB-50     | Component SDI Input/Output                     | 0             | 0                | 0          | 0         | —          | —          | —          |
| IFB-1000   | Composite/Y/C Input Board                      | 0             | 0                | 0          | 0         | —          | —          | —          |
| IFB-1200   | Component (Y/R-Y/B-Y)                          | —             | 0                | —          | 0*3       | —          | —          | —          |
| IFB-1301   | HD (Y/PB/PR)                                   | —             | 0                | —          | 0         | —          | —          | —          |
| IFB-1400   | Progressive (525P/480P) Component              | 0             | 0                | 0          | 0         | —          | —          | —          |
| IFB-LE100  | HD SDI BNC Input/Output                        | —             | —                | —          | —         | —          | —          | —          |
| IFB-G70QMG | Video Interface Board                          | —             | 0*4              | —          | —         | —          | —          | —          |
| IFB-G90E   | Video Interface Board                          | 0*5           | —                | —          | —         | —          | —          | —          |
| IFB-X2000E | Video Interface Board                          | —             | —                | —          | —         | —          | —          | —          |
| EXB-DS10   | Internal Line-doubler Board                    | —             | 0                | 0          | 0         | S*7        | —          | —          |
| PWB-411D   | Composite Video Input Board                    | —             | —                | —          | —         | —          | 0          | 0          |

\*1 Acceptable signals: Analogue RGB, component (Y/R-Y/B-Y), composite video, S video, HD (GBR), HD (Y/PB/PR).

\*2 For input only.

\*3 component (Y/R-Y/B-Y) input capability can be attained with the IFB-12.

\*4 For VPH-G70QMG.

\*5 For VPL-G90E.

\*6 For VPL-FE100E/FX200E.

\*7 Pre-installed in VPH-D50HTM.

## Cables and Adaptors

|                 |                           |                                                 |
|-----------------|---------------------------|-------------------------------------------------|
| Signal Cables   | SIC-10                    | 5 BNC ↔ 5 BNC                                   |
|                 | SMF-400                   | HD D-sub 15-pin (male) ↔ 5BNC                   |
|                 | SMF-401                   | HD D-sub 15-pin (male) ↔ HD D-sub 15-pin (male) |
|                 | SMF-402                   | HD D-sub 15-pin (male) ↔ Phono x 3 (male)       |
|                 | SMF-410                   | HD D-sub 15-pin (male) ↔ HD D-sub 15-pin (male) |
|                 | SMF-D102                  | DFP 20-pin (male) ↔ DFP 20-pin (male)           |
|                 | SMF-D110                  | DFP 20-pin (male) ↔ DFP 20-pin (male)           |
| Remote Cables   | RCC-5G/10G/30G            | D-sub 9-pin (male) ↔ D-sub 9-pin for SIC cable  |
| Signal Adaptors | ADP-10<br>(for SIC cable) | HD D-sub 15-pin ↔ D-sub 9-pin for SIC cable     |
|                 | ADP-20<br>(VGA to Mac®)   | HD D-sub 15-pin ↔ D D-sub 15-pin                |

|  | VPH-V22M | VPH-V20M | VPL-FE100E/FE100M | VPL-FX200E/FX200M | VPL-PX30 | VPL-PX20 | VPL-S900E/S900M | VPL-PX1 | VPL-CS1 | VPL-VW10HT | VPD-LE100 | PC-3000 | IFU-1271M  |
|--|----------|----------|-------------------|-------------------|----------|----------|-----------------|---------|---------|------------|-----------|---------|------------|
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | 0          | 0         | —       | PC-3000    |
|  | 0        | 0        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | —       | IFU-1271M  |
|  | —        | —        | —                 | —                 | —        | 0        | 0               | —       | —       | —          | —         | —       | IFU-SC50   |
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | 0          | 0*2       | 0       | IFB-12A    |
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | 0          | —         | 0       | IFB-21     |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | 0         | —       | IFB-40     |
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | 0          | 0         | 0       | IFB-50     |
|  | —        | —        | 0                 | 0                 | —        | —        | —               | —       | —       | —          | —         | 0       | IFB-1000   |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | 0       | IFB-1200   |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | 0       | IFB-1301   |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | —       | IFB-1400   |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | 0          | —         | —       | IFB-LE100  |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | —       | IFB-G70QMG |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | —       | IFB-G90E   |
|  | —        | —        | 0*6               | 0*6               | —        | —        | —               | —       | —       | —          | —         | —       | IFB-X2000E |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | —       | EXB-DS10   |
|  | —        | —        | —                 | —                 | —        | —        | —               | —       | —       | —          | —         | —       | PWB-411D   |

0 = Optional  
 S = Supplied  
 — = Not Applicable

## Mouse Cables for VPL-PX30/PX20/S900E/S900M/PX1

|         |                                                                                                                           |
|---------|---------------------------------------------------------------------------------------------------------------------------|
| SIC-S20 | mini DIN 4-PIN (male) to Macintosh ↔<br>Square 13-PIN (male) to MOUSE port of a projector                                 |
| SIC-S21 | D-sub 9-PIN (male) to Serial port ↔<br>Square 13-PIN (male) to MOUSE port of a projector                                  |
| SIC-S22 | mini DIN 6-PIN (male) to PS/2 (IBM PC/AT compatible) and Macintosh ↔<br>Square 13-PIN (male) to MOUSE port of a projector |

## Projection Lenses

|            |                                    | VPL-FE100E/FE100M | VPL-FX200E/FX200M |  |
|------------|------------------------------------|-------------------|-------------------|--|
| VPLL-FM20* | Fixed short focus lens             | —                 | —                 |  |
| VPLL-FM21  | Fixed short focus lens             | —                 | —                 |  |
| VPLL-FM30  | Fixed short focus lens             | —                 | —                 |  |
| VPLL-ZM31  | 1.3 times zoom short focus lens    | —                 | —                 |  |
| VPLL-ZM101 | 1.5 times zoom long focus lens     | —                 | —                 |  |
| VPLL-2009  | Fixed short focus lens             | 0                 | 0                 |  |
| VPLL-2014  | Fixed short focus lens             | 0                 | 0                 |  |
| VPLL-2075  | Fixed long focus lens              | 0                 | 0                 |  |
| VPLL-3050  | Fixed long focus lens              | 0                 | —                 |  |
| VPLL-Z2019 | 1.3 times zoom standard focus lens | —                 | 0                 |  |
| VPLL-Z2025 | 1.6 times zoom long focus lens     | 0                 | 0                 |  |
| VPLL-Z2039 | 1.5 times zoom long focus lens     | 0                 | 0                 |  |
| VPLL-Z3020 | 1.3 times zoom standard focus lens | 0                 | —                 |  |
| VPDL-Z1014 | 1.3 times zoom short focus lens    | —                 | —                 |  |
| VPDL-Z1019 | 1.2 times zoom standard focus lens | —                 | —                 |  |
| VPDL-Z1023 | 1.6 times zoom middle focus lens   | —                 | —                 |  |
| VPDL-Z1037 | 1.8 times zoom long focus lens     | —                 | —                 |  |

\* Optical axis angle of projector must be set to 0 degrees.

|  | VPL-PX30 | VPL-PX20 | VPL-S900EIS900M | VPL-PX1 | VPL-CS1 | VPL-JW10HT | VPD-LE100 |             |
|--|----------|----------|-----------------|---------|---------|------------|-----------|-------------|
|  | —        | —        | 0               | —       | —       | —          | —         | VPLL-FM20   |
|  | 0        | 0        | —               | —       | —       | —          | —         | VPLL-FM21   |
|  | —        | —        | 0               | —       | —       | —          | —         | VPLL-FM30   |
|  | 0        | 0        | —               | —       | —       | —          | —         | VPLL-ZM31   |
|  | 0        | 0        | —               | —       | —       | —          | —         | VPLL-ZM101  |
|  | —        | —        | —               | —       | —       | —          | —         | VPLL-2009   |
|  | —        | —        | —               | —       | —       | —          | —         | VPLL-2014   |
|  | —        | —        | —               | —       | —       | —          | —         | VPLL-2075   |
|  | —        | —        | —               | —       | —       | —          | —         | VPLL-3050   |
|  | —        | —        | —               | —       | —       | —          | —         | VPLL-Z2019  |
|  | —        | —        | —               | —       | —       | —          | —         | VPLL-ZM2025 |
|  | —        | —        | —               | —       | —       | —          | —         | VPLL-Z2039  |
|  | —        | —        | —               | —       | —       | —          | —         | VPLL-Z3020  |
|  | —        | —        | —               | —       | —       | —          | 0         | VPDL-Z1014  |
|  | —        | —        | —               | —       | —       | —          | 0         | VPDL-Z1019  |
|  | —        | —        | —               | —       | —       | —          | 0         | VPDL-Z1023  |
|  | —        | —        | —               | —       | —       | —          | 0         | VPDL-Z1037  |

0 = Optional  
— = Not Applicable

Projector Cross Reference Chart

| Model Name         | Panel (x3)             | Light Output (ANSI lumens*1) | Lamp           | Screen size*2 (inches) |  |
|--------------------|------------------------|------------------------------|----------------|------------------------|--|
| Data Projector     |                        |                              |                |                        |  |
| VPD-LE100          | SXGA DMD               | 10000                        | Xenon          | 70 to 700              |  |
| LCD Projectors     |                        |                              |                |                        |  |
| VPL-FE100          | SXGA 1.8-inch LCD      | 3500                         | 120 W UHP (4)  | 40 to 500              |  |
| VPL-FX200          | XGA 1.8-inch LCD       | 3100                         | 120 W UHP (4)  | 40 to 500              |  |
| VPL-PX30           | XGA 1.3-inch LCD       | 2400                         | 200 W UHP      | 40 to 300              |  |
| VPL-PX20           | XGA 1.3-inch LCD       | 1400                         | 200 W UHP      | 40 to 300              |  |
| VPL-S900           | SVGA 1.3-inch LCD      | 1100                         | 120 W UHP      | 40 to 300              |  |
| VPL-PX1            | XGA 0.9-inch LCD       | 1000                         | 120 W plus UHP | 40 to 200              |  |
| VPL-CS1            | SVGA 0.7-inch LCD      | 600                          | 120 W UHP      | 40 to 150              |  |
| VPL-VW10HT         | Wide-XGA 1.35-inch LCD | 1000                         | 200 W UHP      | 40 to 300              |  |
| LCD Rear Projector |                        |                              |                |                        |  |
| KL-X9200M          | XGA 1.3-inch LCD       | —                            | 100 W HID      | 50                     |  |

\*1 ANSI lumens is a measuring method of American National Standards Institute.

\*2 Viewable area, measured diagonally.

|  | Resolution          |                 | Supported Frequency |            |       |     |      |     |      |      |
|--|---------------------|-----------------|---------------------|------------|-------|-----|------|-----|------|------|
|  | Video<br>(TV lines) | RGB<br>(pixels) | fH(kHz)<br>(kHz)    | fV<br>(Hz) | Video | VGA | SVGA | XGA | SXGA | UXGA |
|  | 600                 | 1280 x 1024     | 15 to 100           | 40 to 120  |       |     |      |     |      |      |
|  | 600                 | 1280 x 1024     | 15 to 100           | 40 to 120  |       |     |      |     |      |      |
|  | 600                 | 1024 x 768      | 15 to 94            | 50 to 120  |       |     |      |     |      |      |
|  | 750                 | 1024 x 768      | 15 to 91            | 43 to 85   |       |     |      |     |      |      |
|  | 750                 | 1024 x 768      | 15 to 91            | 43 to 85   |       |     |      |     |      |      |
|  | 600                 | 800 x 600       | 15 to 91            | 43 to 85   |       |     |      |     |      |      |
|  | 750                 | 1024 x 768      | 15, 24 to 91        | 50 to 85   |       |     |      |     |      |      |
|  | 600                 | 800 x 600       | 15 to 91            | 43 to 85   |       |     |      |     |      |      |
|  | 750/1100(HD)        | 1366 x 768      | 15 to 91            | 50 to 85   |       |     |      |     |      |      |
|  | 750                 | 1024 x 768      | 24.8 to 85          | 50 to 85   |       |     |      |     |      |      |

Native  
Acceptable signals

# OTHER

## DSC-1024HD



- Versatile upward and downward digital scan converter
- Input accepted in the 15.6 kHz to 70 kHz horizontal frequency range and the 50 Hz to 120 Hz vertical frequency range and output at an industry standard 15.6 kHz, 31.5 kHz, 33.75 kHz (1080I\*) 37 kHz, 48 kHz or 64 kHz frequency
- Built-in transcoder for universal conversions between video signal formats
- Genlock function is available
- PAL/NTSC conversion capability
- Scan doubler capability
- Automatic input signal recognition
- Variable offset sampling and high-density vertical interpolation capability for converting resolutions
- Adjustable aspect ratios
- Built-in test pattern generator
- Zoom, pan and freeze frame functions provided for easy operation
- On-screen display for adjustment/operation

\* When a 1080I signal is output, a fV (60 Hz/59.94 Hz) is selectable on the on-screen display menu.



|                    |                                                               |
|--------------------|---------------------------------------------------------------|
| Mass:              | 4.1 kg (9 lb 1 oz)                                            |
| Power consumption: | 30 W (max. power on), 3 W (typical power off)                 |
| Dimensions:        | 424 (W) x 44 (H) x 354 (D) mm<br>(16 3/4 x 1 3/4 x 14 inches) |

## DSC-1024G



- Versatile upward and downward digital scan converter
- Input accepted in the 15.6 kHz to 70 kHz horizontal frequency range and the 50 Hz to 120 Hz vertical frequency range and output at an industry standard 15.6 kHz, 31.5 kHz, 37 kHz, 48 kHz or 64 kHz frequency
- Built-in transcoder for universal conversions between video signal formats
- Genlock function is available
- PAL/NTSC conversion capability
- Scan doubler capability
- Automatic input signal recognition
- Variable offset sampling and high-density vertical interpolation capability for converting resolutions
- Adjustable aspect ratios
- Built-in test pattern generator
- Zoom, pan and freeze frame functions provided for easy operation
- On-screen display for adjustment/operation



|                    |                                                               |
|--------------------|---------------------------------------------------------------|
| Mass:              | 4.1 kg (9 lb 1 oz)                                            |
| Power consumption: | 30 W (max. power on), 3 W (typical power off)                 |
| Dimensions:        | 424 (W) x 44 (H) x 354 (D) mm<br>(16 3/4 x 1 3/4 x 14 inches) |

# Colour Reproduction of Monitors

When using monitors as measuring instruments, calibrations is necessary, just as it is for general measuring instruments. This is called setting up the monitor. Even if a monitor is not used as a measuring instrument, monitor set-up is required to obtain identical colour reproduction among monitors.

The colour reproduction of the monitors is affected by many different parameters, making it very difficult to match the colour of several monitors.

The following factors can affect the colour reproduction of monitors.

- 1. Phosphor chromaticity difference in the three colours of the CRT
- 2. Colour temperature (white balance)
- 3. Ambient light
- 4. Decoder characteristics, Chroma (colour) and Phase (hue) adjustments
- 5. Brightness (black level)
- 6. Contrast (picture)

When using monitors as measuring instruments, it is very important **that a monitor is capable of identically reproducing the colour of an input signal**, regardless of the manufacturer or type of monitor. In other words, the monitors are required **to always provide the same colour reproduction even under different environmental conditions**. Thus, for optimal performance, **selecting the appropriate monitor and properly utilizing this monitor** is an important factor.

## Colour System

The picture of the television is transferred as signals of three additive colours; red, green and blue (additive mixing). Therefore, if these three colours are not precisely defined, the reproduced picture will vary on each monitor.

There are mainly three television colour systems in the world, PAL, NTSC and SECAM. The chromaticity of red, green and blue and the reference white of these three systems differ as indicated in the table below.

Colour System and The Chromaticity Coordinates

|                 |       | Colour System      |       |                   |       |
|-----------------|-------|--------------------|-------|-------------------|-------|
|                 |       | PAL/SECAM          |       | NTSC              |       |
|                 |       | X                  | Y     | X                 | Y     |
| Colour          | Red   | 0.64               | 0.33  | 0.67              | 0.33  |
|                 | Green | 0.29               | 0.6   | 0.21              | 0.72  |
|                 | Blue  | 0.15               | 0.06  | 0.14              | 0.08  |
| Standard White* |       | 0.313              | 0.329 | 0.31              | 0.316 |
|                 |       | Standard light D65 |       | Standard light C* |       |

\* Refer to Pages 87-88.

## 1. Phosphor Chromaticity

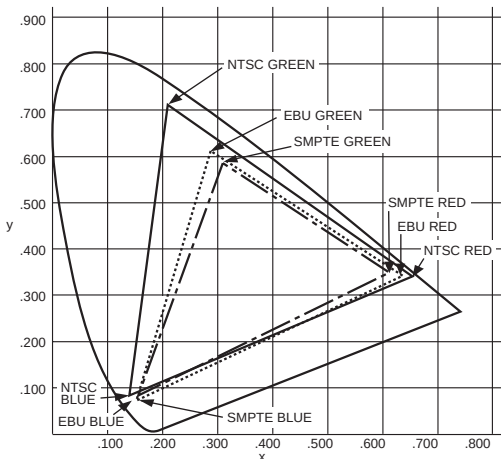
The colour reproduction on the CRT is a mixture of red, green and blue emitted from the phosphors. If the red, green and blue are not identical among the monitors, the signal is reproduced differently on each monitor. Therefore, for studio monitors and signal evaluation monitors, it is necessary to employ a CRT with the phosphors strictly conforming to the standard chromaticity points. This cannot be overlooked, especially in broadcast stations and production facilities, where the programmes are exchanged.

In Europe, the broadcast standard is determined by EBU (European Broadcast Union). Broadcast quality monitors conform to this standard. These chromaticity coordinates of red, green and blue are identical with those of the theoretical colours in the PAL system.

Sony professional monitors adopt the EBU phosphor CRT, which thoroughly satisfies the production and broadcast standard. Developing and producing its own CRTs, Sony is able to maintain such high criteria.

For presentation and distribution monitors, manufacturers employ their own phosphor chromaticity in order to give the maximum brightness on their monitors.

**CIE Chromaticity Diagram**



### NOTE

---

Phosphor chromaticity significantly affects colour reproduction. Even if the colour temperature is adjusted to D65 (the world standard colour temperature to which white balance is adjusted), a different phosphor chromaticity provides different colour reproduction. Therefore, if monitors are used for colour evaluation, it is recommended to use a monitor in which phosphor chromaticity is strictly defined. Sony manufactures the CRTs used in its monitors. As a result, the quality of the entire production process, from CRT production to final monitor assembly, can be ensured.

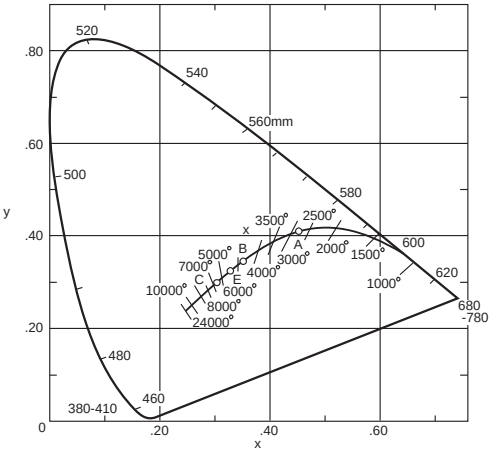
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## 2. Colour Temperature (White balance)

A television signal is generally a mixture of luminance signal (black and white) and chrominance signal (PAL/SECAM and NTSC) - the proportion of the former being larger than that of the latter. The luminance signal is represented on a monitor screen as a black and white picture. However, there are various kinds of white. The white colour is defined as **“colour temperature.”**

Colour temperature is the absolute temperature of a black body radiator that produces the same chromaticity as the light source. As the colour of a fire flame indicates the temperature in the scientific field, the colour of an illuminant determines its temperature; “colour temperature” (Absolute temperature, Kelvin). For example, when white appears somewhat blue, the colour temperature is high and when white appears somewhat red the colour temperature is low.

The chart on the right page shows blackbody radiation chromaticity. This is called blackbody curve. The reproduced colour looks different depending on the colour of the ambient light (i.e. incandescent or fluorescent). Therefore, the light source must be considered when setting up a monitor.

**Blackbody Radiator Curve**

CIE (Commission Internationale de L'Eclairage) has decided the following light sources as standard.

**Standard light A**

Light emitted by tungsten lamp. Equal to blackbody radiation at 2854 Kelvin.

**Standard light B**

Close to blackbody radiation at 4879 Kelvin or sunlight at noon.

**Standard light C**

Blackbody radiation at 6740 Kelvin or average daylight. Accepted as standard white for NTSC system.

**Standard light D65**

The colour temperature of 6504 Kelvin. Slightly off the blackbody radiator curve. Equal to daylight plus ultraviolet ray, and close to the illuminant under which a monitor is usually used. Accepted as broadcast standard white for both PAL/SECAM and NTSC system. This colour temperature is a world standard, to which white balance of monitors are adjusted.

**Standard light D55**

The colour temperature of 5500 Kelvin. Off the blackbody radiator curve. Equal to skylight added to sunlight.

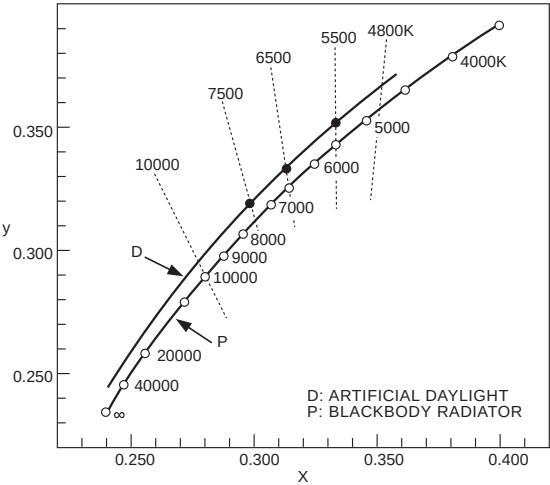
**Standard light D75**

The colour temperature of 7500 Kelvin. Off the blackbody radiator curve. Defined as skylight in the northern countries.

**Standard light D93**

The colour temperature of 9300 Kelvin. Off the blackbody radiator curve. Accepted as broadcast standard white in Japan.

Daylight Curve



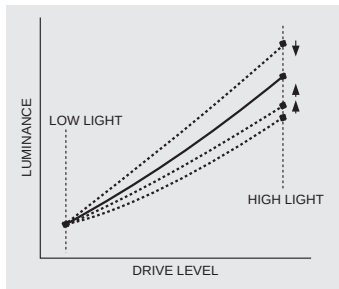
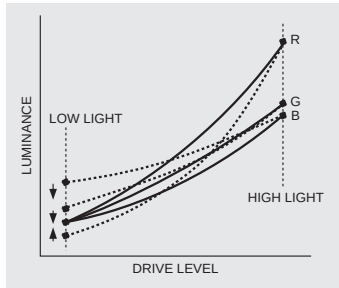
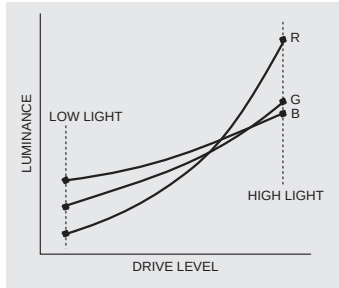
Standard White

|                        | Standard White | Colour System |
|------------------------|----------------|---------------|
| Europe (except France) | D65            | PAL           |
| France, CIS            | D65            | SECAM         |
| North America          | D65            | NTSC          |
| Japan                  | D93            | NTSC          |
| Taipei                 | D65            | NTSC          |
| Korea                  | D65            | NTSC          |
| Singapore              | D65            | PAL           |
| Hong Kong              | D65            | PAL           |
| Central America        | D65            | NTSC          |
| Brazil                 | D65            | PAL-M         |

## White Balance Adjustment

To use a monitor as a measuring instrument, it is necessary to adjust the white on the monitor screen to the standard white. This is white balance adjustment. When accurately measuring the colour temperature, a colour analyser is required. However, white balance can be adjusted by matching the white of a monitor to that of a reference monitor.

White balance should be adjusted at both low light and high light levels. The range from low light to high light is adjusted according to the gamma characteristic of the CRT.



## NOTE

- Low light level is adjusted with bias controls, while gain controls are used for high light level adjustment. Since low light level is affected by the ambient light, it should be adjusted under normal operating conditions.
- The Sony BKM-14L Auto Set-up Probe is available for automatic white balance set-up with certain monitors.

### 3. Ambient Light

As discussed before, the ambient light greatly affects the colour reproduction on the monitor. It is ideal that the ambient light does not hit the monitor screen directly. It is also preferable to use the room light that has the colour temperature close to a standard white and to make the room light as dim as possible. Low signals (nearly black) are particularly influenced by the ambient light, which eventually effects the colour temperature and gray scale.

For optimum use of broadcast monitors, EBU recommends the following conditions:

#### A. Light

- Indirect light that has a colour temperature near the standard white D65
- 3.5fL light shone on the monitor screen (10% of the brightness at 100 IRE white)
- 30 to 40 lux light at an operator

#### B. Distance from the viewer

5±1 times of the screen height

#### C. Installation place

60 to 120 cm (23 <sup>5</sup>/<sub>8</sub> to 47 <sup>1</sup>/<sub>4</sub> inches) away from the wall

#### D. Colour of the wall

Neutral tints, gray is best

#### E. Viewing angle

Operator should be able to observe the entire monitor screen within 15 degrees

### 4. Decoder Characteristics, Chroma (colour) and Phase (hue) Adjustments

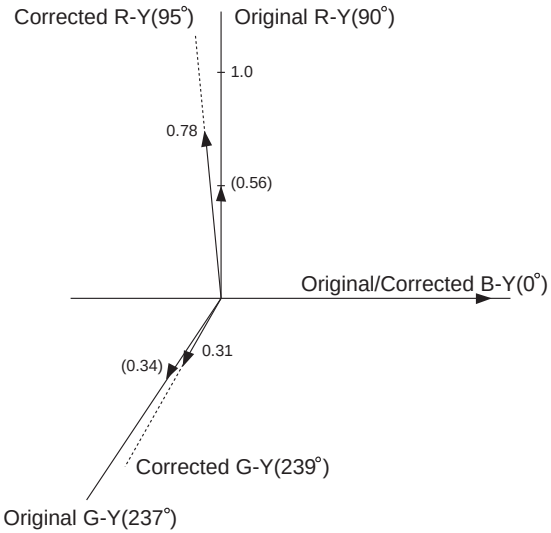
PAL and NTSC signals cannot be reproduced on a monitor screen without a decoder which converts these signals into red, green and blue or Y/R-Y/B-Y signals. Therefore, all monitors contain a decoder. The characteristics of the decoder and the settings of chroma and phase (NTSC) affect the colour reproduction on a monitor.

This is particularly evident in the NTSC system since the hue is changed with the phase adjustment. Therefore, proper colour reproduction cannot be obtained if the adjustments are not correctly made. Incorrect phase adjustment, for instance, will cause flesh tones to appear green or purple on the monitor.

## Characteristics of Decoder

Theoretically with the demodulation axis of the NTSC system, the output of R-Y and B-Y signals should be perpendicular (90 degrees) to reproduce the input signal accurately. In a consumer model, the signals are decoded according to each manufacturer's taste for a more natural skin-tone.

### Corrected Demodulation Axis and Amplitude Correction Ratio



### Y/C Separation and Comb Filter

In the PAL system, the chrominance signal (C) overlaps with the luminance signal (Y) at around 4.43 MHz. Therefore, these signals should be separated before demodulation. Y/C separation does not directly influence the colour reproduction, but it is very important to the picture performance of monitors.

By taking advantage of signal characteristics, a monitor performs Y/C separation. The Y signal is obtained by eliminating the high bandwidth portion (around 4.43 MHz) with a frequency trap filter, while the C signal is extracted by the bandpass filter. This method, however, removes the high bandwidth portion of the Y signal, which results in lack of details on the monitor screen and low resolution.

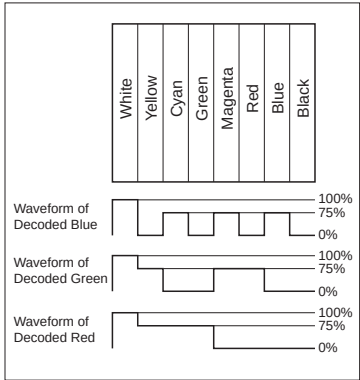
Furthermore, incomplete Y/C separation causes **cross colour** in which fine black and white signals with no colour information are seen with moire, and **cross luminance** which produces dot noise on the outline of objects.

For a more accurate Y/C separation, a comb filter, which can separate Y and C signals by making use of the correlation of every other scanning line in the PAL signal has been designed. This contributes to lessen the decrease in resolution, cross colour and cross luminance phenomena. For example, the cross luminance phenomena between green and magenta on the EBU colour bars will be eliminated when the comb filter is activated.

However, the comb filter has a drawback. Since standard 2-line comb filters use the correlation of the scanning line, vertical resolution decreases and dot noise along the horizontal lines appear when reproducing horizontal stripes. To eliminate this phenomenon, a 3-line comb filter has been developed, which uses two scanning lines next to each other and minimizes PAL artifacts in both horizontal and vertical transition.

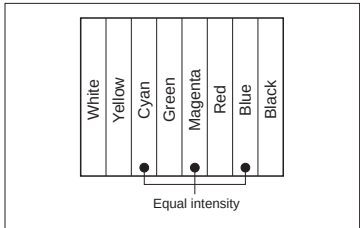
## Chroma and Phase (PAL) Adjustments

1. Input 100% colour bars to the monitor.
2. Set the monitor to the "blue only" mode.
3. Adjust chroma level so that the intensities of the third, fifth and seventh bars from the left side become equal.



\* For standard PAL monitors, chroma adjustments will be completed at the above step 3. However, when the Simple PAL mode is available in a monitor, phase adjustment can be made as follows:

4. Set the monitor to the Simple PAL mode.
5. Adjust phase control so that line crawling is invisible.



### 5. Brightness (Black level) Set-up

The dark portion of a picture which cannot be easily observed in a bright room may become perceivable in a dark room. Brightness should thus be adjusted according to the **conditions under which a monitor is to be used**. In addition, there are **different levels to the black signal** itself.

For most video signals, black is the state of brightness at zero (i.e., 0 IRE). However, for NTSC signals, 7.5 IRE is defined as a reference black level. That is why many video programs have black level set at 7.5 IRE. Therefore, strictly speaking, a monitor should be set up according to the input signal. As a result, an NTSC signal generator has a 0/7.5 IRE selection switch for the colour bars.

### 6. Contrast (picture) Set-up

Proper contrast set-up is very important in accurately reproducing input signals. Contrast can be adjusted so that the bleeding of the scanning lines diminishes and a separation of scanning lines is visible, while the white field (100 IRE) of the colour bars is observed.

**Monitor and Magnetic Field**

Because of the CRT structure, monitors are influenced by outside magnetic field. The higher the resolution, the more strongly the monitor is influenced by these fields.

Although a magnetic field is invisible, it affects the monitor performance by causing colour uniformity drift and by shifting the location of the picture. Therefore, selecting a proper installation site is very important to ensuring monitor performance.

Magnetic fields are usually generated by products such as motors and speakers which employ magnets.

In addition to these magnetic field generating devices, conditions in the immediate surroundings such as high-tension electrical wires, transformers and trains also generate magnetic fields.

The interference can be eliminated by relocating the monitor away from these influences. In some cases, it is effective to shield a monitor with nonmagnetized metal plates. In some locations, it is impossible to eliminate all the effects of terrestrial magnetism.

Whenever changing the location of a monitor, degaussing the monitor should be done before adjustments are made.

# Monitor Adjustments

The following is a brief explanation on how to set up a monitor.

**1. Turn on the power, input a white signal and warm up the monitor for more than 30 minutes.**

**2. Check the white uniformity.**

If there is impurity in the colour on the screen, the monitor screen should be demagnetized. Although automatic degaussing is usually performed when the power is turned on, degaussing can be made by pushing a degauss button or by turning the power off then on again. However, if a magnetic influence still remains, the use of a degausser is recommended.

**3. Check convergence, linearity and screen position with test signals such as cross hatch signal.**

White uniformity, convergence and screen position are influenced by the terrestrial magnetism after relocating a monitor. Therefore, after relocation, proper adjustments should be made.

**4. Check white balance and black balance.**

Unstable black balance is prominent, particularly at low light. The black balance is adjusted with bias volumes of red, green and blue while gain volumes are used for high light adjustment.

**5. Adjust chroma and phase by using colour bar signals as a reference.**

Incomplete adjustment will preclude accurate colour reproduction.

**6. Adjust brightness and contrast according to the brightness of the surroundings and the reference picture.**



